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ORIGINAL ARTICLES.

A CONTRIBUTION TO THE RELATIONS OF OVULATION AND MENSTRUATION.

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Read in the Section on Obstetrics and Diseases of Women, May, 1884.

MR. CHAIRMAN AND GENTLEMEN.—The aim of all investigation should be the attainment of truth. And, in order that the discussion of any scientific question should be profitable, it is essential that the arguments advanced be based upon known facts. Any process of reasoning without such foundation is presumptuous, if not impertinent. In deference to this plain and just principle I shall abstain from making any assertion, or educing any inference not fairly warranted by the observations of trustworthy investigators.

In the year 1673, De Graaf, a Dutch anatomist, described, in connection with the anatomy of the ovaries the bodies which have since borne his name. They were thought to be the ova of mammalia, and this belief obtained for many years. Sir Edward Home noticed the ruptured follicle during menstruation, but attached no importance to the coincidence.

In 1821 Dr. Power clearly enunciated the doctrine of the periodical ripening and rupture of the follicle at the menstrual period; and the discovery by Baer, in 1827, that the follicle was only the enveloping structure of the ovule and not the ovule itself made the rupture an intelligible and significant fact; and this may therefore be regarded as the birth of what is known as the ovulation theory of menstruation.

Négriér, in 1831, and, following him, Gendrin, Paterson, Barry, Raciborski, Bichoff, Pouchet, and others, furnished additional proofs, based upon anatomical observations, tending to show that menstruation was not only simultaneous with, but dependent upon and in consequence of ovulation. The doctrine seemed so consistent and reasonable, and was apparently so well sustained by the evidence adduced that its general acceptance by physiologists is easily understood. Nevertheless, there have always been some who doubted its correctness, and who considered the evidences alluded to as insufficient and inconclusive.

These alleged proofs consist (*a*) of observations made post-mortem upon the bodies of women in whom the date of the last menstrual period was known, and (*b*) of the effects following the artificial removal of the ovaries during life; and it is asserted that these observations justify the following propositions, namely:

1. In the human female, at regular periods of about twenty-eight days, a Graafian follicle is ripened and usually bursts, discharging a matured ovule which passes into the Fallopian tube and is transmitted to the uterus.

2. Coincident with, and dependent upon the maturation and extrusion of the ovule, certain changes occur in the mucous membrane of the uterus which result in a sanguineous discharge from that organ.

3. The removal of the ovaries is necessarily followed by a cessation of menstruation.

Certainly, if the facts which have been observed really warranted these conclusions there could be no ground for discussion. But facts are phenomena, and in order that they may lead to true results they must be accurately observed and fairly interpreted. Further, *all* the facts which bear upon a given subject must be taken into account, otherwise the conclusions obtained will almost certainly be fallacious.

I will endeavor to show that these conditions have not been complied with in the discussion of the subject under consideration, and that, if they were, very different results would be obtained. Indeed, it is easily proven that either ovulation or menstruation may occur independently of the other, and that, hence, there is no necessary connection between the two functions.

(*a*) *Ovulation may occur without accompanying menstruation.*—Ovulation is a function of the ovary, and includes the ripening of a Graafian follicle and the discharge of an ovule. The evidences of the process consist in (1) the presence of an enlarged or ruptured follicle; (2) the presence, in the latter, of a blood-clot or corpus luteum: (3) cicatrices marking the seat of former rupture; (4) the occurrence of conception.

Malpighi and Vallisneri long ago observed that developed Graafian follicles are occasionally found in the fully-grown fœtus. Ritchie[1] also has demonstrated that in the ovaries of new-born infants and children as early as the sixth year may be found highly vascular Graafian follicles; and that, at the age of fourteen and prior to menstruation, they are found as large as

[1] Ovarian Physiology and Pathology. London 1865.

small raisins, filled with their usual transparent granular fluid. These observations have been confirmed by the more recent researches of Grohe, Slavjansky,[1] Sinéty,[2] Haussmann,[3] and others.

Haussmann, whose observations were made upon 84 subjects, asserts that such early development of the follicles as was noticed by Ritchie, takes place in about ten per cent. of all cases.

Of course, ovulation is the necessary condition of impregnation; and it is admitted by all obstetric writers that conception may occur in the absence of menstruation. Our literature contains many instances of girls who have become pregnant prior to the first appearance of the flow; of women who have conceived subsequently to the menopause; and of others in whom pregnancy has occurred during lactation before the reappearance of menstruation.

Rondelet[4] cites an instance of a woman who was delivered twelve times, and Joubert mentions another who bore eighteen children, neither of the women having ever menstruated. Leishman relates the case of a woman who married at 27, and who menstruated the first time after her eighth labor. St. Germain[5] tells of one who married at 20, became pregnant in the early months of her married life a few days after menstruation. She subsequently had eleven children, the last in her forty-fifth year, having never menstruated during the entire period of twenty-five years. At the age of 78 she was in good health. Dr. S. T. Gregory[6] relates the case of a woman whose general health was always good, the mother of seven children, and who had never menstruated, and who had never experienced the usual symptoms preceding or attending menstruation. In a paper read before the New York Journal Association, Dr. Fordyce Barker[7] related several cases of women who had given birth to large families of children, and yet had never menstruated. In one case which occurred in his own practice, a woman who had menstruated irregularly and scantily previous to marriage, ceased entirely afterwards, and yet gave birth to ten children.

Very many other instances of similar character are on record. Indeed, they are so numerous as to scarcely attract attention.

I am aware that the argument based upon this class of facts is not satisfactory, for it may be justly urged that in many of the cases menstruation might have taken place had it not been prevented by conception. But this objection will hardly stand against another class of cases in which follicles have matured and corpora lutea have formed during pregnancy.

Scanzoni admits that the Graafian follicle enlarges and matures during pregnancy, but he has never found one which had burst. Mayrhofer,[8] however, has found during pregnancy the freshy formed corpus luteum, and thinks it may be formed monthly during that condition. Slavjansky[9] has described the state of the ovaries in a case of extra-uterine gestation. The patient was 24 years old, and had had one child previously. She died from rupture of the left Fallopian tube at three and a half months. Menstruation was suppressed during the pregnancy. The right ovary contained a recent true corpus luteum with all the characteristics strongly marked. Near it was a maturing Graafian follicle. In the left ovary was a cavity, the walls of which corresponded to those of a ripe Graafian follicle. A small prominence was noticed near the thinnest portion of the wall. It was removed on the point of a needle, and found to consist of a mass of epithelial cells, in the midst of which was an ovule. Hence, it was clearly not a cystic degeneration, but a ripe Graafian follicle ready to burst.

Sinéty, too, has made two observations which can only be explained on the theory that ovulation and menstruation are independent processes.

The first of these was reported to the Biological Society of Paris, April 25, 1874.[1] The subject was a woman who had died of phthisis, and who had not menstruated for five months. One ovary contained a ruptured Graafian follicle. The second case was reported to the same society in 1877. The observer described the anatomical characters of the uterus and ovaries of a woman who had never menstruated. She died at the age of 38. With the exception of the absence of the flow, she had presented all the features of puberty from the tenth year. The uterus was externally of normal size, but the cavity was formed almost entirely by that of the neck; the cavity of the body was infantile, as was likewise the mucous membrane. Ovulation, however, had been very active, the ovaries presenting many false corpora lutea.

(*b*) *Menstruation may occur without accompanying ovulation.*—Inasmuch as the menstrual periods occupy from one-sixth to one-fourth of a woman's lifetime for thirty years; and, further, as Graafian follicles are maturing and rupturing, and corpora lutea are forming and disappearing continually, we should expect that a broken follicle or a corpus luteum in some of its stages would frequently be found coincident with menstruation. Indeed, it could not be otherwise. So that persons who are satisfied of the correctness of the ovulation theory because they find such coincidences, have usually no lack of evidence to sustain their belief. Yet, abundant as such evidence unquestionably is, it sometimes fails; for menstruation frequently occurs without any such simultaneous change in the ovary. From many instances of this character which have been recorded, I select a few for your consideration.

Dr. W. W. Gerhard[2] presented to the College of Physicians of Philadelphia the uterus and appendages of a multipara, 25 years old, who died of apoplexy during a menstrual period. Although the woman had been the subject of menorrhagia, an examination of the ovaries failed to show any recent ripening or rupture of a follicle. Dr. Stedman[3] has reported the case of a married woman, 45 years of age, who died of some pulmonary affection, having

[1] Virchow's Archiv. Band iv, Heft IV.
[2] Brown-Sequard's Archiv. de Physiol., No. v.
[3] Centralblatt, No. 32, 1875.
[4] Gardien, Traité d'Accouchements, vol. 1, p. 220.
[5] *L Union Médicale de Canada*, Dec., 1875.
[6] *Amer. Jour. Med. Sciences*, vol. xxv, p. 549.
[7] *Obstet. Jour.*, Great Britain and Ireland, (Amer. Supplement), vol. ii, p. 154.
[8] *Obstet. Jour.*, Great Britain and Ireland, vol, iv, p. 699.
[9] Annales de Gynécologie, Feb. 1878.

[1] *Amer. Jour. Med. Sciences*, vol. 68, p. 240.
[2] *Amer. Jour. Med. Sciences*, vol. xxxvi, p. 410.
[3] *Amer. Jour. Med. Sciences*, vol. xxiv, p. 83.

had no symptoms of uterine disease. Her last confinement occurred at thirty-nine, when she had twins. Menstruation was regular almost to the time of death. On examination not a trace of the left ovary was found, but in its place was a thin and simple serous cyst, nearly two and a half inches in diameter. On the other side there was a collection of cysts forming a mass twice the size of an English walnut, upon the surface of which were spread out the flattened, dense, atrophied remains of the ovary.

On December 2, 1876, M. De Sinéty read before the *Société de Biologie* an account of the autopsy of one of Charcot's cases of hysterical hemianæsthesia, and pain in the situation of the ovary of the same side. The patient had begun to menstruate at 13 years, and had menstruated almost regularly since that time. Histological examination showed that there was not a single Graafian follicle arrived at maturity, nor were there any corpora lutea or cicatrices in either ovary. It was evident that no ovules had been expelled from the ovaries for a considerable time. It was, in fact, a case of menstruation without ovulation.

Some of the reported cases of hernia of the ovaries throw valuable light upon this subject. For example, Dr. Alfred Meadows[1] relates the case of a single woman, 23 years of age, who began to menstruate at 15, and continued to do so at regular intervals, with some pain, down to the age of 20, when, after stooping, a swelling suddenly appeared in the right inguinal region, caused, as was learned subsequently, by the herniated ovary. At the menstrual period following this she suffered violent pain of a character different from any she had previously felt; it preceded the discharge; at the same time the tumor was much increased in size. From that time onward, for three years she suffered in a similar manner, the pain being so acute that at every monthly period she was obliged to lie in bed for a week or more. Sometimes the tumor would swell to the size of "two fists," and be exquisitely tender to the touch. She had no suffering during the inter-menstrual period. The tumor was removed. The upper portion, or pedicle, which went through the abdominal ring, was found distended with fluid. This was punctured, and about an ounce of the contents let out. The pedicle was then tied, and the tumor removed. It measured about two inches in diameter, and proved to be the right ovary. It was found, on section, to have undergone remarkable structural change. "Instead of presenting the usual dense, compact appearance, it contained throughout numerous irregularly-shaped spaces, varying in size from a pin's head to half an inch in diameter, and all were filled with the same kind of fluid as flowed from the pedicle. These cells or cysts appeared to communicate with one another, and the whole organ to be infiltrated, as it were, with the fluid in question. There were no proper Graafian vesicles to be seen." No Graafian follicles, no ovules, no ovulation, to account for the great increase in the size of the ovary preceding and during the catamenial period! What is the fair inference? Is it not that the swelling of the ovary was caused by the pelvic congestion attendant upon the menstrual period?

Dr. Robert Barnes[1] relates a case of a single woman, aged forty-one, who had always enjoyed good health, and in whom the catamenia had occurred punctually, but scantily, and attended by some pain. "She sustained a rupture in the left groin at twenty-four, and has since worn a truss. About three years ago she first observed a second swelling a little below the old rupture. This mass, she asserts, becomes almost twice its usual size at the menstrual periods, and tender and even painful. It continues in this state for a week at least after the disappearance of the catamenia, and then gradually lessens and can be handled without causing pain." April 24, a menstrual period commenced and lasted five days. Another period commenced May 20, and ceased on the 25th. On the 7th of June the tumor was removed by Mr. Pollock. An examination showed that it was an ovary filled with small cysts of varying size, but not a single matured follicle.

In this case, also, we find regularly recurring menstruation with simultaneous swelling and tenderness of the ovary, but without any preceding or accompanying follicular rupture.

I have had three opportunities of examining the ovaries of women who died at or near the menstrual period.

One of these was in the case of a healthy unmarried woman, twenty-eight years of age, who died from an overdose of morphia, taken accidentally. She had menstruated regularly, and a period had ceased four days before death. Both ovaries were normal in structure and size, the right being somewhat larger than the left. It contained several Graafian vesicles scattered throughout the stroma. Two of these were larger than the others, one being about an eighth of an inch in diameter, and the other as large as a small currant. The latter was near the surface and caused a slight projection. The left ovary contained fewer vesicles, but had the indistinct remains of a corpus luteum not less, certainly, than four or five weeks old. A second case was that of a young girl fifteen years old, who died from the effects of a burn. She had commenced menstruating eighteen months before, but the function had been performed regularly only about ten months. A period had ceased twelve days prior to death. Neither ovary contained corpora lutea, nor bore the marks of recent rupture. The largest vesicle, which was about a quarter of an inch in diameter, was found in the left ovary about a sixteenth of an ineh from the surface. The third case was also in the person of an unmarried woman, who died of peritonitis three days after an operation for the removal of a cystic kidney. A menstrual period had ceased five days before death. Springing from the right ovary was a thin-walled cyst containing about four ounces of a clear, yellowish, serous fluid. In the left was a ruptured follicle which contained a partially adherent blood-clot as large as a pea, and which seemed five or six days old.

Prof. G. Leopold[2] has recently made a most valu-

[1] *Amer. Jour. Obstetrics*, etc., vol. vi, p. 231.

[1] *Amer. Jour. Obstetrics*, Jan., 1882.
[2] Archiv f. Gynäkologie, Bd. XXI, Heft 3, 1883.

able contribution to this subject, based upon an examination of 32 pairs of ovaries which were removed from patients of whom the date of the last menstruation was known. The post-menstrual period varied from one to thirty-five days. Leopold does not consider that his researches, or any others that have yet been made, are sufficient to settle the points in dispute; but they certainly show that the Graafian follicle may rupture at any time without reference to the menstrual period, and that, consequently, there is no necessary temporal connection between the two processes.

The 32 lithographic figures which accompany the paper, and which I here present for your inspection, seem conclusive upon this point,—at least, so far as their number may warrant any conclusion. To illustrate, in figures 1, 4, 5, 11, 14, 15, 18, 21 and 23, are representations of burst follicles, none of them having been broken for more than one to three days, but their relation to the last known menstruation varied from one day to three weeks, being respectively 1, 5, 12, 15, 16, 20 and 21 days. Likewise, there may be seen delineations of large projecting follicles, just ready to burst through their enveloping structures in figures 1, 2, 6, 9, 12, 14, 17, 18, 20, 21, 24, 26, 28 and 30; and these were removed at periods after menstruation all the way from one to 26 days. Figures 22, 23 and 24 show the conditions of the ovaries 21 days after menstruation. If they be compared with each other, it will be seen that they have scarcely any feature in common. In one (fig. 22), there is a large typical corpus luteum; in another (fig. 23), there is a recently-burst follicle; and in the third (fig. 24), there are numerous mature superficial follicles. The ovaries depicted in figures 20 and 21 were removed on the 20th day. In the first there is a mature follicle which is ready to burst; in the second there is a burst follicle precisely like the one seen in fig. 1, removed on the first day, and also a large ripe follicle on the point of bursting. The ovaries represented in figures 31 and 32 were removed 35 days after menstruation. In one (*c*, fig. 31) there is a typical corpus luteum five weeks old, and a recently-ruptured follicle; while in the other (*c*, *l*, fig. 32) there is a corpus luteum ten days old. The ovaries shown in figures 16, 17 and 18 were removed 16 days after a period. In one of them (*c*, fig. 16), there is a typical corpus luteum, probably 12 days old, and two follicles ready to burst; in fig. 17 there are several mature follicles; and in fig. 18 there is a freshly-broken follicle, and another just ready to burst. In short, there is no single condition of the ovary which corresponds even approximately with the menstrual period; and it would be the merest guessing to select any one of the specimens and assign to it the date to which it belonged.

Lawson Tait, in a paper read before the Midland Medical Society, and published in the *Medical Times* for March, 1884, gives the record of 49 cases of operations for removal of both ovaries, and he rests satisfied that the evidence so far has completely destroyed the ovular theory of menstruation. These cases are as follows:

1. Cases, nine in number, where it was evident that menstruation and ovulation were concurrent.

2. Cases of negative proof against the ovulation theory of menstruation, fifteen in number.

3. Cases, twenty-five in number, affording positive evidence against the theory.

(*c*) *The removal of the ovaries does not necessarily determine the cessation of menstruation.*—Many persons, who, recognizing the inevitable logic of facts, are willing to admit that menstruation may occur without coincident ovulation, deny its possibility in the absence of the ovaries. This, which was formerly almost the universal belief, is still the prevalent one. It is based upon the fact that, in most cases in which the ovaries have been removed, women who before menstruated regularly have ceased at once, or very soon, and forever.

After ovariotomy became a frequent operation it was noticed that in many instances the ablated organs were so greatly diseased as to make it incredible that they had continued to perform their normal functions; but, inasmuch as one ovary was frequently left, it was not difficult to suppose that it had been doing, and might continue to do the work of both. By and by, however, as double ovariotomy became more common, it was observed that in very many cases there appeared a subsequent bloody flow from the genital organs, recurring with more or less regularity, and persisting for varying periods from a few months to many years. In some of these the discharge was perfectly regular in point of time, was accompanied by the usual symptoms of the menstrual period, and continued to appear until the approach of the ordinary time of the menopause. At first, instances of this character scarcely attracted attention; then, as their number increased, they aroused curiosity; next, they excited wonder; and, finally, inquiry. At first the discharge was regarded as a mere accidental hæmorrhage, dependent, possibly, upon some uterine disease, and its rhythmical character was either not noticed, or thought to be only a causeless coincidence. But the frequency of the cases demanded more earnest consideration, and at length investigation began concerning their significance.

In a paper which I had the honor to publish in the *American Journal of Obstetrics*, in October, 1876, I mentioned a large number of instances in which menstruation continued after removal of both ovaries. Many others of the same kind have been published since. They are no longer uncommon. I present here a few of the more recent that have come to my knowledge. And I beg to have it observed that I do not include any of those cases, so frequently noticed, in which within a short time after ovariotomy a bloody discharge occurs from the genitals, lasting from a few hours to a few days; or those even in which the flow, regular or irregular, is seen for only two or three months; but only such as from their rhythmical character and persistent recurrence seem to possess greater significance.

In the Transactions of the State Medical Society of Michigan for the year 1870, is published an instance of this kind by Prof. E. W. Jenks. The patient was an unmarried woman, aged 30 years. Both

ovaries were removed, for cystic disease, September 15, 1869, ten days after a menstrual period. Eighteen days subsequent to the operation menstrual molimenal symptoms manifested themselves, and continued two or three days, although no discharge of blood or mucus appeared. Twenty-eight days later the symptoms indicative of the onset of menstruation returned, this time accompanied by a slight discharge of mucus from the vagina. In four weeks more the *molimen* appeared distinctly, and there was a discharge of mucus tinged with blood. After this there was a regular monthly discharge of blood, lasting the average time of the monthly flow; and this had continued down to the date of the report—June 4, 1870,—nine months after the operation.

MM. Verneuil and Terrier[1] record the case of a woman, 36 years of age, who underwent ovariotomy for multilocular cysts. Both ovaries were removed July 6, 1875. On December 25, following, menstruation appeared, was profuse for four days, and lasted six. It appeared again February 20, was very abundant, and lasted ten days. It then recurred every alternate month until the summer of 1876, then it became regular, once a month, lasting from six to eight days.

At a meeting of the *Société de Biologie*, held December 2, 1876, M. de Sinéty reported the case of a patient who had undergone double ovariotomy, and in whom, a few months afterwards, menstruation had recommenced and recurred at regular intervals.

On October 18, 1881, Billroth[2] operated on a woman aged 29, who was married at 18, and had five children without any trouble. The sixth pregnancy ended with the expulsion of a decomposing six months' fœtus. Both ovaries were removed, together with portions of the bladder and ileum. Menstruation returned three months after the operation, and continued to be regular, lasting from three to four days.[3]

Dr. T. A. Emmet reported to the American Gynæcological Society[4] the case of a woman from whom he removed the Fallopian tubes and ovaries at the Woman's Hospital, in New York, eighteen months previously, and who, after a lapse of three months succeeding the operation, had menstruated regularly thirteen times.[5]

In addition to a case reported in the paper referred to, a second one has occurred in my own experience.

Through the courtesy of Dr. Charles H. Venn, of Chicago, I visited Mary S., in January, 1882. She was 21 years of age, unmarried, and had commenced menstruating at 13. On March 12, 1883, I assisted Dr. Venn in performing Battey's operation for intractable dysmenorrhœa. The ovaries seemed in every respect normal. The operation was done twelve days after the cessation of a menstrual period. The next period came duly, but the discharge was scanty and without pain. A second and third period had each a similar history. The fourth, however, was marked by a great increase in the amount of discharge, and a return of the former pain. Since then menstruation has been entirely regular, very profuse, and attended by great pain, which is only alleviated by hypodermic injections of morphia and chloroform inhalations.

The persistence of a periodical hæmorrhagic discharge after removal of the ovaries is no longer denied, although many are unwilling to consider it as menstruation. Its occurrence has been explained on several more or less reasonable hypotheses.

Thus, it has been urged as a possible explanation that some portion of the ovarian tissue may have been left behind, and that this remaining portion has been sufficient to continue the work of maturing and expelling ovules. Surely, the mind which could rest content with such an explanation would be easily satisfied. In refutation of its force it is only necessary to call attention to the obvious anatomical and physiological difficulties involved in the supposition, and to the fact that no such condition has been shown to exist in any of the cases under consideration.

Again, it has been suggested that supernumerary ovaries might be present, and one or more left behind. Since the occasional existence of accessory ovaries has been demonstrated, I am quite willing to admit that the argument has some weight. But this anomalous condition is extremely rare, and like the former, has not been found present in any one of the reported cases of supposed non-ovarian menstruation.

Biegel[1] states that in 350 post-mortem examinations he found accessory ovaries in eight,—two being in new-born infants. They were situated on the boundary line separating the peritonæum from the serous covering of the ovary, and varied in size from a hemp-seed to a cherry. They consisted of normal ovarian tissue, and some of them were sessile and contained Graafian follicles, although most of them were attached by a slender pedicle, and were in every way rudimentary.[2]

But the favorite theory in regard to these cases, is that the organism in the course of years becomes so accustomed to the discharge of blood that this still continues although the ovaries be removed; that, in short, the apparent anomaly is explainable on the doctrine of the influence of habit.

I have elsewhere[3] taken occasion to expose the fallacy of this argument, and need here only call attention to the fact that in many, if not most of the cases in which menstruation has persisted after removal of the ovaries the so-called habit was actually broken up; it was not a continuance, but a recommencement of the function. This was the fact in five out of the six cases to which reference has been made in this paper. In one, menstruation was suspended for six months, in another "a few months," and in three others three months each—intervals sufficiently long to efface the effect of mere habit, and to show that we must seek for some other more potent impelling force to account for the subsequent resumption of functional regularity. What this motive power is we do not yet know.

[1] Annales de Gynécologie, August, 1877.
[2] *Wiener Med. Woch.*, Nos. 2 and 3.
[3] The report of this case was made fifteen months after the operation.
[4] Annual meeting, September, 1883.
[5] In a recent letter Dr. Emmet informs the writer that this patient has menstruated regularly eighteen times.

[1] *Wien. Med. Woch.*, May 26, 1877.
[2] Dr. T. G. Thomas observed one case in which he found a third ovary, having removed two, and allowed it to remain.
[3] Loc. cit., p. 27.

In regard to it I do not desire to offer either opinion or theory. My object has been only to present facts. To my mind, these facts justify at least the following conclusions:

1. Ovulation and menstruation may each occur independently of the other.

2. Ovulation is an irregular but constant function of the ovaries; while menstruation is a rhythmical function of the uterus.

3. Graafian follicles mature and rupture at any time, without any necessary connection with menstruation.

4. Menstruation may persist regularly without interruption, or may temporarily suspend and resume its regularity after the removal of both ovaries.

DISCUSSION.

Dr. Campbell, of Georgia.—Mr. Chairman: You are aware, sir, that the reading of that paper must be very agreeable to myself. You are aware of the subject of my concluding remarks at the meeting of the Gynæcological Society, some months ago, and I am very glad indeed to have such confirmation of the views I presented at that time. I believe, with the distinguished author of that paper, that menstruation and ovulation, although having a relation to each other, so far as cause and effect are concerned, are independent processes inaugurated to act together, but by no means the one dependent on the other. Ordinarily, when we wish to study experimental physiology, we take some lower animal. We have only the analogous results. But in this case, of the human female, we have the experiment performed upon the subject herself; and oöphorectomy has been over and over again performed, and the facts are being rapidly developed that it does not arrest menstruation, that it does not put an end to the uterine processes. In case after case that has come under my observation in which oöphorectomy has been performed, I find that menstruation has fully continued after the removal of the ovary, sometimes more or less disturbed. You will remember in a case mentioned by Dr. Emmett last September, in our discussion, in which both ovaries and Fallopian tubes were removed, the woman had continued to menstruate for thirteen months while under his personal care, and he was informed five months later, when removed, that she was still menstruating.

In a private letter from Dr. Englemann, of Missouri, I received an account of the only case in which he performed double oöphorectomy.

In that case the woman continued to menstruate for three years, without any disturbance of the function whatever. And I do not know why she should not. The egg-making apparatus is there, and has its own supply of blood; the nest-making apparatus is there, and has its own supply of blood; and I see no reason why taking away the egg-making apparatus should interfere with the nest-making apparatus, and menstruation is an accompaniment of nest-making. And I think that the result of experimental physiology, as performed on the subject itself—the woman—by cutting out her ovaries, is establishing the fact that ovulation is not the controlling power; or, in other words, that menstruation is by no means the expression of ovulation.

In another case that has come under my observation both ovaries were removed, and for over eight months since the operation the menstrual flow has returned, with all the neurotic symptoms that attended it before the operation; and not only that, but an excessive hæmorrhage, in which ergot and every hæmostatic means possible have to be used, or she has an alarming hæmorrhage.

According to my view of menstruation, we have studied it too much in regard to the apparatus. We give too much credit to histology. We do not look to what is the philosophy of menstruation. My view of it is, that a woman at the age of puberty has certain endowments, presents certain developments, general developments occur. The internal and external organs of generation are developed, and with the maturity comes an endowment of blood. For what? To support her and make her grow fast and better? Oh, no; some of this blood is used in developing a vesicle into an ovule, and in conception an ovule into an ovum, the ovum into a fœtus, and the fœtus into an infant, which, after being nourished by it for nine months is expelled. I know I have now from twelve to eighteen months of absent menstrual blood to account for. During this time it is utilized in lactation to sustain and nourish the separated, but still dependent pensioner until it can masticate its food—when this waste will begin again in a monthly flow, or, more happily the blood becomes utilized in another fecundation, which of course is the most economical way, if she does not use it this way she must waste it in natural or vicarious menstruation, or suffer ill-health or discomfort.

What is menstruation, then, as we have it? A waste of the blood that is given to woman for procreation.

This is the object of the endowment of blood; and the only woman I knew who made perfect use of her blood was one with whose case I am familiar.

This ideal woman told me, "I was married at 17, and never had menstruation afterwards, although I had twelve children." She used her blood and continued to utilize it, until the close of her menstrual life, and in the end she had not one drop of her sinking fund to set down to profit and loss. [Laughter and applause.] She had none of the disturbances attendant upon the change of life; and she had, at last, a dozen healthy men and women to show as the result of her procreative business transactions. [Laughter.]

This, Mr. Chairman, is my theory and philosophy of menstruation, and also my method of studying the process and its phenomena. [Renewed and prolonged applause.]

Dr. Englemann, of Missouri: Mr. Chairman.—As we have been frequently going too far in one direction, (menstruation and ovulation being considered inseparable and dependent upon each other), I think we are going a little too far in the other direction now. The facts are not quite all in, but this is something which will unquestionably be established by facts. There is no theorizing about it upon isolated cases here and there. There are exceptions to every-

thing. These conditions must be established by facts, as far as the facts go to show.

I have examined a large number of menstruating uteri. The ovule bursts upon the first, second or third day of the menstrual flow,—that is, under normal conditions. We have a monthly congestion in the female sexual organs, and ovulation and menstruation are the evidences of that congestion,—coexistent evidences, not one dependent upon the other. There is a flow of blood to those organs. The ovaries show that congestion in one way,—they ripen the ovule. The uterus shows a congestion, if impregnation does not take place, by a discharge of blood. Both functions are performed—side by side—related—on a par—not one dependent upon the other. The congestion of those organs has its purpose in each.

We have isolated cases. Here and there, indeed, we see something peculiar,—one appearing to show that ovulation is not dependent upon menstruation or menstruation upon ovulation. But, as a rule, if one of these functions is disturbed, the other is likely to be. Sometimes one function is disturbed and the other goes on.

But we do not always know the full facts—the case of double oöphorectomy, to which Dr. Campbell has referred, is still more peculiar than I thought it to be. I removed an ovarian tumor, on one side, as large as an ordinary hat, with a large pedicle. The pedicle was cut short. On the other side was another ovarian tumor which I removed, as large as a child's head, and I have that specimen in alcohol. That patient was restored to the best of health; menstruated for three years regularly, and will be confined in a month! [Laughter.] She has both ovaries removed, sir; the one was completely removed, and the other was as large as a child's head. I have it in alcohol, as I have said, and you can see what is left. A bit of the pedicle was left, of course, but nothing in the shape of healthy ovarian tissue at all. I think it is most important that that exists, in order that it should be examined. Here you have both ovaries removed as well as they can be removed in oöphorectomy; and menstruation ensued. When she first wrote me of her condition I was afraid she was doomed. She had borne children before, she knew what it was, but did not suppose such a thing could happen. But the physician who is attending her tells me that it is a normal pregnancy, and that she has but about a month more before confinement.

The Chairman: Do you think that she might have a third ovary.

Dr. Englemann: I have never seen any such a thing; and in the operation, which was a very difficult one (for I removed about thirteen small cysts, at the same time), I went up the abdominal cavity as far as the liver and found nothing unusual. So that I think this is a most striking example, which tells us that when we think that we have certain oöphorectomy, we are not always sure as in the cases of destroyed ovaries, which have been referred to here.

Dr. Robertson, of South Carolina.—Mr. Chairman: I think this is indeed a remarkable case! A woman conceiving without ovaries! [Laughter.] I think this is the most remarkable case recorded in medical history—that a woman without ovaries has conceived and is about to bring forth! I hope the case will be recorded and reported, and that we shall hereafter hear the final result of a woman without ovaries conceiving and bringing forth! [Renewed laughter.]

Dr. Battey, of Georgia, (being greeted with loud applause)—Mr. Chairman: This question, sir, as is well known, is one that has greatly interested me. I think, sir, the question is one of facts. It is not one that is ever to be settled by theory. It has happened to me, sir, to see more than one hot and furious discussion brought to a very speedy close by a mutual understanding of what the disputants meant by certain terms. When gentlemen misunderstand each other as to the significance of terms, they dispute interminably, and never arrive at a conclusion. Now, I think we have one of those cases here. Insufficient attention has been given to the meaning of the term menstruation. What is the meaning of the term "menstruation?" No definite and satisfactory answer has been made as yet, to my knowledge, to that question. There is, I think, sir, "menstruation" and "pseudo-menstruation," if you will allow those terms. In other words, there is a menstruation which occurs to a married woman of 25, who is putting every second or third year a babe into our world, and then there is a menstruation that occurs to her babe, but four months old. But that is a different menstruation. It has a different purpose. Its results are different. There is a menstruation which occurs to a lady 92 years of age, who changed life at 45 or 48, gone through a long series of quietude and exemption from menstruation, and under the magical touch of electricity from above has again begun to menstruate and menstruated for two years. Is that "menstruation" or "pseudo-menstruation?" Gentlemen, we must understand each other on these points. If the menstruation in the babe at four months old is like the menstruation of the lady of 25 years old, then I will hold the ground with you, that it is a function of little or no significance, and having a cause or no cause as you choose to claim.

Now, what do the facts prove? I cannot give the authorities, but I lay down dogmatically what are the facts! The facts are that the ovaries are not necessary to pseudo-menstruation. The facts are that the Fallopian tubes are not necessary to pseudo-menstruation. The facts are that the uterus is not necessary to pseudo-menstruation. The facts are that the vagina is not necessary to pseudo-menstruation. And the facts are that the vulva is not necessary to pseudo-menstruation. Those are the facts!

Now, then, if I understand my friend, Dr. Campbell, correctly, he laid down the proposition, as he understands it, that cessation of menstruation does not follow upon the extirpation of the ovaries. I go further than my friend, Dr. Campbell. I lay down the fact that sterility does not follow the extirpation of the ovaries.

I had the honor, sir, three years ago, of bringing before the International Medical Congress, at London, a case from my practice, of the extirpation of both ovaries, followed in little less than two years by the birth of a healthy child. That was the first case, I

think, of that kind that has been presented. I thought it was unique, until I came here to-day and find the case that Dr. Englemann has brought before us. I feel comforted, sir, by that case.

But I have a third case, not so strong, perhaps, as these two, but still remarkable. I extirpated an ovarian tumor and dermoid cyst with the left ovary. There was an enlargement at the time of the right ovary, but I did not think it proper to interfere with it. In 12 months' time my patient called my attention to the fact that the right ovary was considerably enlarged. I examined it and found that it was as large as a walnut. I examined her during the succeeding year. It increased in size, and developed beyond the size of a walnut. She begged me to remove it. I said: "No, possibly—who can tell?—possibly that ovary may give you a child yet." It did give her a child, Mr. Chairman. Of course it is true that there was probably some ovarian stroma that was left there.

But, gentlemen, I might take all day up on this subject. I will not consume your valuable time. [Applause.]

Brief remarks were also made by Dr. Healy, of Maryland.

Dr. Jackson, in reply.—Mr. Chairman: The paper really comprehended rather more than was read as you observed. It took up, however, simply the question as regards the temporal relations between ovulation and menstruation. I promised to draw no conclusions that were not clearly justified by facts. These facts are embodied in what some of you have had the opportunity of seeing—in these plates taken from ovaries removed from every woman in whom the date of the last menstrual period was known. There is shown in these plates that there is absolutely no temporal connection at all between the ripening, the bursting of a follicle, with the menstrual flood. These are facts, and they are facts that can be addressed to the eye of any one who will look at them. There are others which, as I say, have been recorded, of which these are simply confirmatory. They have more force, because we are taught more by what we see than by what we hear, and very properly, I think.

Now, with regard to the question of the definition of true and false menstruation. No such distinction has been made by me. I stated in the paper what ovulation was, that it consisted in the ripening and bursting of an ovule. Menstruation I regard as a sanguineous flow, dependent upon the mucous membrane of the uterus, and that may occur absolutely without this ovarian process. Unquestionably that is true; it cannot longer be denied, so that we cannot include in our definition of menstruation, a process dependent upon ovulation, and we cannot declare it a false menstruation because it occurs without the ovaries. To say that it is a false menstruation because a woman is young or old, is simply begging the question.

Dr. Battey.—I would like to ask the gentleman one question. Can this menstruation occur in the absence of the uterus as well as the ovaries?

Dr. Jackson.—I have never known it to do so, but I have seen recorded cases in which there was for a time a sanguineous flow following the operation of removal of both ovaries and of the uterus above the cervix. Of such cases I think there are a number on record.

Now, if we grant that the definition of menstruation is a regularly-occurring flood, discharged from the mucous membrane of the uterus, then it is true menstruation, in that sense, whether the ovaries be present or not. [Applause]

ON RAILROAD INJURIES OF THE EXTREMITIES OF THE HUMAN BODY, WITH OBSERVATIONS ON THE SITE OF AMPUTATION, AND SUBSEQUENT TREATMENT OF THE STUMP.

BY THEODORE R. VARICK, M.D., MEDICAL DIRECTOR OF, AND SURGEON TO, ST. FRANCIS' HOSPITAL, AND SURGEON TO JERSEY CITY CHARITY HOSPITAL, JERSEY CITY, N. J.

The consideration of severe injuries of the extremities of the human body, the result of railroad accidents, and, indeed, of all crushing blows inflicted by great momentum, is the topic which I have selected for discussion on this occasion.

I shall consider their proximate trauma, also their effects on the heart and great vessels.

For their effects on the nervous system I refer you to the antagonistic works of Erichsen and Page.

Lastly, I shall offer a few observations on the subject of amputations and the after treatment of the stump, also the reports of a few cases bearing on the subject under discussion.

In the good old days of stage-coaching, when the travel, as a rule, was limited to nine inside and three outside including the driver; when the speed of 12 miles an hour was a marvel, an occasional upset seldom resulted in more than a simple fracture, or when compound, scarcely ever comminuted, the offices of the surgeon were rarely called in for any other purpose than to apply splints, to reduce a dislocation, or to administer to sundry contusions.

In this progressive age, the increase of speed and multiplication of travellers are accompanied by increased frequency of accidents, and greater gravity of the traumatisms resulting from derailment, collisions, the coupling of cars, and the running down of unfortunate pedestrians who may not be able to get out of the way.

Owing to the great weight and high rate of speed, injuries inflicted by trains in transit are of the most destructive character, producing comminution of bone and laceration and pulpification of soft parts.

The traumatism is not confined to the immediate part struck, but extends far beyond.

The appearance of the integument is not always a criterion of the condition of the subjacent parts, as there may not be the slightest abrasion or mark of

contusion thereon, yet the underlying muscular and vascular systems may be hopelessly destroyed.

It is a common observation that, concealed under the tegumentary condition above stated, we find rupture of the muscles, the bellies of which are full of ecchymotic patches, and at points so pulpified as to be easily broken down by the fingers.

The inquiry naturally arises as to the "*modus operandi*" by which such results are produced.

It is difficult to imagine a force sufficiently powerful, by direct impact, to produce such a disintegration of the subcutaneous parts, without leaving its impress on the surface, and we are compelled to look elsewhere for the cause.

It is a well recognized fact that a muscle may be ruptured by its own contractile force, especially when taken by surprise, or unprepared for the call made upon it, or when in an unnatural or awkward position when struck.

A case in point has recently come under my observation. I. L. C., aged 54, a strong, heavy, muscular man, while wheeling a bale of hay on a truck, on making a sudden effort for the purpose of ascending an incline, felt, as he supposed, a smart blow on the calf of the left leg, followed by lameness. I saw the case six hours after the occurrence, and found a subcutaneous depression about two inches in extent in its transverse diameter, in the external belly of the gastrocnemius, into which, on pressure, the finger readily sank.

There followed in a few hours extreme ecchymosis of the part.

At the present time (two months after the injury) the lameness has not entirely subsided, and the depression is well marked.

So also the "lawn tennis" leg serves as an illustration of the pathological condition under consideration.

The effect of blows in producing muscular contraction is well illustrated by the tendon patellar reflex contraction of the quadriceps extensor femoris.

A very firm amount of pressure on the ligamentum patellæ, or the tendon immediately above, gradually applied, produces scarcely any action on the part of the extensors of the thigh; but let the same amount of force be applied in a sudden manner, and "up goes your foot."

The condition of ankle clonus is thus described: "If the foot is firmly flexed by pressure on the sole, and the tendo-achillis is tapped briskly, the foot at once undergoes flexion and extension in rapid succession for a considerable number of times. Gowers found the average number of contractions to be a little more than six in a second." "By the aid of the myograph Gowers has ascertained that the commencement of the ankle clonus occurs too soon after the blow upon the tendo-achillis for the impression to travel up to the spinal cord and back to the muscles of the leg. It is therefore concluded that, unlike the knee phenomenon, the foot clonus is produced by the direct stimulation of the muscles both on the front and back of the leg, through suddenly increased tension." Reynolds' System of Medicine, vol. i, p. 987.

In these instances, although the mechanism is different, the effect on the muscular fibres is the same.

A blow upon a muscle held in extreme tension causes violent and repeated contraction, and as in the case where great momentum inflicts the blow, it is fair to assume that rupture of the contracting muscle or its tendon to a greater or less extent may ensue.

In the tendon-reflex and ankle clonus, the joints are left free (except in the latter case when motion is only restricted by manual pressure) to move as the muscles contract; but in the case of railroad injuries, one end of the limb is often held immovable between the rail and car wheel, while the other is fixed by the weight of the body, so that the force of muscular contraction is expended on the muscle itself.

This involuntary contraction in conjunction with the efforts of the victim to free himself, would produce some of the lesions which come under our observation.

Again, the liquids of the human body are confined within strong tegumentary and fascial coverings. Blows of many tons' momentum rupture these envelopes in many places, pulpify and comminute the tissues beneath, and eject the liquids they contain with great force and to great distances. These ejected liquids are sometimes thrown into other tissues, and the blood and lymph are driven back through the larger vessels with the same momentum as that of the blow struck.

The whole vascular system being a series of tubes having a common centre at the heart, this organ on its right side at the time of the blow receives the impulse of venous blood, and should there exist any organic cardiac imperfection a fatal paralysis, commonly known as shock may result. Paralysis from over-distension.

It is fair to assume that the rupture of the vessels of the part when struck a heavy blow, is in reality a fortunate circumstance, so far as the life of the individual is concerned, as in this way a certain portion of the force is expended, for should the whole momentum of the projected current be thrown on the heart, instant death might result.

On the arterial side, the blood flowing toward the part struck is suddenly and forcibly arrested.

This sudden arrest of the circulation is felt by the heart at its systole, producing heart strain, synchronous with the augmented propulsion thither on the venous side.

These forces together produce the results above described.

These results are in proportion to the size of the vessels involved in the injury, or in other words to the proximity to the heart.

After death from direct or primary shock, the heart is found gorged with blood, distended to its utmost capacity, together with general engorgement of the whole venous system.

In view of the tremendous power of the *impinging* force, is not this a reasonable or at least a plausible explanation of the conditions described?

This injected and pulpified condition of the muscular tissue may exist in any part as high up as the point of origin of the muscle.

Even though the soft parts may not present the typical appearance described and seem healthy, yet their vitality may be so far injured at the time as to render their reparation impossible; or the gradual supervention of sub-fascial hæmorrhage higher up in the limb, may by gradually increasing pressure destroy the already weakened circulation of the part.

Sloughing not unfrequently follows when least expected.

The subject of treatment of those cases requiring amputation, has to a certain extent been foreshadowed in the preceding remarks.

In statistics of amputation performed at St. Francis' Hospital, Jersey City, published in *The American Journal of the Medical Sciences*, April, 1881, I use the following language, referring to the damaged condition of the parts above the seat of injury: "a recognition of these facts has led to the practice of giving the seat of injury a '*wide berth*,' especially as relates to the lower extremity." "In those cases where the injury extends above the lower third of the leg, the rule is to amputate above the knee, or in other words, put a joint between the seat of injury and the point of amputation, as under these circumstances alone can we be assured of sound tissues at the point of operation."

It has occurred in several cases which have come under my observation where this rule has not been followed, that the operation, although most skilfully performed, has resulted in sloughing of the stump, involving the necessity of reamputation, resection of the bone or death of the patient.

The sloughing involves oftentimes not only the integuments, but also the connective and muscular tissues.

In some cases it has been observed that the muscles slough to a much greater extent than the skin, giving the stump a cupped appearance, with the bone projecting from the centre; the whole resembling an old-fashioned candlestick.

Since the introduction of anæsthetics, shock from operation has been reduced to a minimum, and therefore the removal of a few more inches of the limb is of very little consequence so far as the safety of the individual is concerned; and the perfection reached in the adaptation of artificial limbs amply compensates for the increased shortening.

All these considerations should outweigh the risks of an amputation in the immediate proximity of the injury.

It matters very little as to the method of amputating; each giving practically equally good results.

The subsequent treatment of the patient and manner of dressing the stump is often the determining cause of the favorable or fatal termination of the case.

It has been my practice for many years, after the vessels have been tied, to sponge the surface of the stump with water a little below the boiling point, not only for the purpose of dislodging any coagula that may have formed in the interstices of the tissues, but to stop further oozing.

The flaps should not be brought together until every particle of oozing has ceased, as it is a recognized fact that any extravasation in the cavity of the stump allowed to remain is one of the most potent factors of *sepsis*, which frequently occurs when this precaution is not observed.

A drainage-tube of sufficient size having been placed in position, the flaps are to be brought together and retained by sutures alone.

A stream of some antiseptic fluid (I have as a rule used Volkmann's solution of thymol) is run through the tube until every trace of color is lost, and the liquid is absolutely clear.

Over all is applied a wad of oakum, which is confined with a roller of sufficient tightness to counteract any spasmodic action of the muscles and give the limb firm support.

The stump is washed out through the drainage-tube twice or thrice a day.

The tube is allowed to remain until all colored discharge has disappeared.

The ends of the tube are left free, in order that the syringing may be done without disturbing the dressing.

The fenestræ in the drainage-tube should be large enough to prevent clogging by the discharges, and the tube itself should be occasionally rotated so as to bring the fenestræ in coaptation with different parts of the wound.

Reliance should not be wholly placed on the tube, as there may be interspaces in the stump which may serve as receptacles for the accumulation of the discharges.

In order to obviate any possibility of such a contingency, it is my practice after washing out the tube, to insert the nozzle of the syringe into the wound alongside of the tube and thoroughly wash out the wound externally to the tube.

One great source of ill success, is using too small a tube. It is better to have one too large than one too small.

In cases where the injury is received above the knee, and the part requires immediate amputation, the stump should invariably be left open, and treated after the method recommended by the late Prof. Jas. R. Wood, of New York.

In open stumps there sometimes exists, especially in muscular subjects, a strong tendency to retraction of the flaps.

This is to be counteracted by the application of extension after Buck's method in cases of fracture of the thigh. The straps are to be applied on the anterior and posterior aspects of the limb, and they are further utilized as granulation progresses, by pinning the two together, thereby approximating the flaps. By this method the dressing may be renewed, and the wound thoroughly cleansed without any inconvenience to the patient.

Injuries of the hand and arm occur most frequently from coupling cars.

These injuries vary in degree from the crushing of a few phalanges, to that of whole upper extremity.

Owing to the greater reparative powers possessed by this part of the economy, we are justified in operating nearer the seat of injury than in the lower extremities. In injuries to the hand, especially, should conservative surgery be carried to its extreme limit.

Injuries to the dorsum of the hand and fingers are less serious than those involving the palm, or palmar aspect of the fingers.

It is my rule, provided the palmar arches are intact, and even one digital artery remains to a finger, to avoid amputation; allowing those hopelessly damaged to slough, and the line of demarcation to form before removing the part affected.

After removing portions manifestly destroyed, such as lifeless parts of fingers attached solely by tendinous and tegumentary connections (and the same remark applies to the toes and foot), the part is immersed in water as hot as can be borne with comfort, and allowed to remain in the bath about half an hour. It is then wrapped in oakum wrung out of warm water, or a hot flaxseed poultice, and the whole enveloped in oil silk.

These baths are repeated at intervals of three hours, until all sloughing ceases and the line of demarcation has formed.

The part is then dressed with bals. fir, and any portion of bone remaining uncovered by soft parts is removed, and the whole allowed to heal by granulation.

By following this plan of treatment, it has been my good fortune to save many a hand and foot which had been condemned as irreparable.

In conclusion, I beg leave to offer the reports of a few cases illustrative of the preceding remarks:

Case I. B. received a c. c. c. fracture of the leg at the junction of the lower and middle thirds, the result of having been run over by a locomotive and train of cars.

Above the immediate seat of injury there was not the slightest mark to indicate that there was any damage to the subcutaneous soft parts.

Notwithstanding the opposition of two other surgeons, I amputated at the lower third of the thigh.

On dissecting the amputated part, the gastrocnemii were found lacerated and pulpified at several points, at which were found extensive extravasations of blood.

Underlying the whole was found a string of coagula extending from the seat of injury to the popliteal space.

The patient made a rapid recovery.

Case II. Pat. Gilligan, aged 27 years, was admitted to St. Francis' Hospital, Jersey City, Sept. 5, 1875, on account of a c. c. c. fracture of the right leg, at the lower portion of the lower third, having been run over by a train of cars. Amputation was performed at the junction of the lower and middle thirds. The soft parts at this point were apparently sound.

In a few days sloughing of the stump set in to a greater extent in the subcutaneous tissues than in the skin.

The stump ultimately assumed the cup-shaped appearance heretofore described.

The patient finally recovered, and was discharged from the hospital May 27, 1876.

Case III. Reported by Dr. F. D. Gray, interne to "The Jersey City Charity Hospital."

"On the morning of August 2, 1883, Mark Selor, æt. 35, laborer, was admitted to Charity Hospital, Jersey City, suffering from the effects of a railroad accident, which occurred several hours previous.

Examination showed that he had sustained a c. c. fracture of the right tibia and fibula about the middle third, also a crushing injury of the right foot. The patient was, however, suffering severely from shock, and the operation (amputation) was postponed till the next day, hoping that his condition would improve. Under the influence of stimulants and nourishment the patient rallied sufficiently to make the operation expedient.

"The point selected for the operation was about two inches below the knee joint. The external wound being quite extensive, and reaching pretty well up toward the knee, it was barely possible to secure sufficient sound tissue to make the flaps (antero-posterior.) In fact, the inner border of the anterior flap was made up in part of the edge of the wound. A drainage-tube was introduced, flaps united throughout with sutures and wrapped in towels wrung out of hot water, then again surrounded by a layer of cotton. The dressing was repeated often enough to keep up the warmth of the stump. Stump washed out three times daily with a 2 per cent. solution of carbolic acid. The patient rallied quite satisfactorily from the immediate effects of the operation, and for eight or ten hours did as well as could be expected. After this he began to grow restless and slightly delirious. On the morning of August 4 (day following the operation) the stump presented a swollen and discolored appearance. Its temperature was lowered, and on pressure it gave the crackling of emphysematous tissue. In short, it had all the appearance of beginning decomposition.

"Stimulants and nourishment together with anodynes were freely administered, but with no effect, as the patient grew rapidly worse, delirium and restlessness increasing, while at the same time he became exceedingly weak. Death occurred about 2 o'clock on the morning of August 5, about 36 hours after the operation.

"Before death the cellular tissue of the stump had become emphysematous from generation of gases, up to the middle of the thigh."

I am indebted to Dr. John D. McGill, surgeon to St. Francis' Hospital, for the reports of the three following cases.

Case I. Patrick Nicholson, æt. 19, brakeman by occupation, was admitted to St. Francis' Hospital, Nov. 9, 1881, having sustained a c. c. fracture of the bones of the foot. The soft parts above the seat of injury and extending as far as the malleoli were more or less contused and lacerated. Above the malleoli the tissues appeared to have escaped serious injury and were apparently healthy.

Amputation was performed at the lower third of the leg, with long anterior and short posterior flaps. The open method in treatment was adopted. The patient rallied well from the operation.

Forty-eight hours after the operation the anterior flap presented a bluish-yellow tinge at its lower border, and some ecchymosis was observed on the leg above the stump. Twenty-four hours later the stump presented a swollen, unhealthy appearance. A well-

defined slough extended about an inch and a half from the lower border of the anterior flap. A solution of permanganate of potash was applied locally.

Quinine and opium internally. Quinine gr. v every three hours.

Poultices were subsequently applied to the stump and within eight days about one-half of the anterior flap sloughed. Two abscesses were opened in the leg above the stump, and several troublesome sinuses slit up.

After this the patient did well, and was discharged cured January 28, 1882.

In this case, although the tissues at the site of operation were apparently healthy at the time of amputation, subsequent events proved that the limit of injury to the soft parts was considerably higher up in the leg.

CASE 2. William Sire, æt. 27 years, railroad employe, July 26, 1882, sustained a compound fracture below the knee joint.

From the seat of injury to the knee joint the integument was intact, but the underlying tissues crepitated upon digital pressure. Amputation being decided upon, in view of the doubtful condition of the tissues below the knee, it was determined to operate at the lower third of the thigh.

An examination of the amputated leg disclosed the following:

Seat of injury about the middle of the leg, c. c. fracture caused by the wheel of a railroad car. Skin above the injury intact, but somewhat contused in places.

Muscles were of a bluish-red color. Small dots of blood were entangled in the meshes of the muscular fibres which had a torn, frayed look. That the nerves, arteries and veins had shared injury with the muscles was plainly evident. This condition of the soft tissues extended from the point of direct injury (some six inches below the knee joint) almost to the knee.

In this case it was apparent that had the operation been performed below the knee, owing to the fact that the soft tissues were injured beyond reparation, a disastrous result would have been certain.

As it was, the patient made a somewhat tedious but satisfactory recovery, and was discharged cured Sept. 8, 1882.

CASE 3. Timothy Daly, æt. 20 years, was admitted to St. Francis' Hospital Nov. 3, 1882, having sustained a c. c. fracture of the leg two or three inches above the ankle. The patient was employed as a brakeman on a coal car, had missed his footing and fallen between the cars. Before he could be extricated two or three cars had passed over his leg completely severing the foot. When admitted Daly was suffering severely from shock, skin pale, cold, and clammy, pulse feeble and rapid, lips bluish in color. Owing to the mangled and lacerated condition of the blood-vessels at the site of injury, there was but a small loss of blood. The condition of the patient was such that all operative interference was negatived until reaction should take place. Under the use of stimulants, with artificial heat applied to the extremities, the patient slowly reacted so as to be in condition to permit amputation about twelve hours after the injury was received.

In this case, as in case 2, owing to the nature of the accident and the evident irreparable injury to the subcutaneous tissues and blood-vessels, it was deemed expedient to operate above the knee. An examination of the amputated leg revealed about the same condition of the muscles and blood-vessels that was noticed in case No. 2, the degree of injuries to the tissues being perhaps a little greater.

Without the occurrence of other incidents worthy of note Daly made a satisfactory recovery, and was discharged cured Jan. 11, 1883.

Many more cases might be quoted did time and space permit.

That the method of treatment advocated has not been barren of results, I report that since August 12, 1879, during my various periods of service at St. Francis' Hospital, I have performed 21 major amputations without a death. All with the exception of two were for c. c. fractures, the result of railroad accidents.

Of these 15 were primary and 6 secondary, which are classified as follows:

Thighs, primary	6,	Secondary 4,	Total..... 10
Leg, primary	3,		Total..... 3
Hip joint,		Secondary 1,	Total..... 1
Shoulder joint, primary	1,		Total..... 1
Arm, primary	2,	Seoondary 1,	Total..... 3
Forearm, primary	3,		Total..... 3
			21

In the Jersey City Charity Hospital during the same period I performed 5 major amputations with one death.

All these cases were for c. c. fractures, the result of railroad injuries, viz.:

Thighs, primary	4.
Leg, primary	1.
	5.

The fatal result in one case was due to secondary hæmorrhage, occurring on the fourth day after the operation.

The patient was a broken down tramp, and the hæmorrhage due to sloughing of the stump, opening the femoral artery above the ligature.

Thigh, secondary,	1.
Leg, secondary,	1.
Arm, primary	1.
	3.

This gives a total of 29 cases with one death.

Finally the treatment may be epitomized in one sentence, viz.:

Amputate through sound tissues, and keep the stump clean.

The temperature and pulse at this date, May 4, are as follows:

	Temperature.		Pulse.	
	A. M.	P. M.	A. M.	P. M.
Thigh	98¾	99	76	84
Forearm	98½	98½	72	80

In both cases union by first intention exists to nearly the entire extent of the wounds.

NOTE.—Since this paper was wrtiten I have at the Jersey City Charity Hospital, as the result of railroad accidents, performed two primary amputations, viz: one of the thigh, and one of the forearm. The former on the 27th, and the latter on the 28th ult. Both cases are progressing favorably.

REPORT OF TWO OVARIOTOMIES.

BY W. D. HAMILTON, M.D., COLUMBUS, OHIO.

[Read before the Central Ohio Medical Society, September, 1884.]

CASE I. About the 20th of last February I first saw Mrs. Huldah Hammill, of this city. She gave the following history: Her age was 57. Four years previously she noticed a lump, about as large as a goose-egg, low down in her right side. As it increased in size the uterus sank lower in the pelvis, until finally it lay entirely without her body.

I found the lower extremities and abdominal walls dropsical. The features, which were pinched and anxious, presented the typical "facies ovariana." She suffered mainly from the mechanical inconvenience of carrying a large tumor. The mass, ovoid and symmetrical in shape, gave unequivocal fluctuation. Change of position affected neither its shape nor the line of dulness. Rectal examination revealed a hard mass low down in the pelvis, which was supposed to be made up of small subcysts with thick contents. An operation was advised, and the patient consented.

She was taken to the "Home for the Friendless," where for several days she received a thorough course of baths, catharsis and liquid nourishment. On the morning of March 12 the operation was done, with the assistance of Drs. Lee and Blake. An incision was made five inches in length. A large trocar drew off about twenty-five pounds of colloid fluid. Some of this escaped into the peritoneal cavity, through a ruptured posterior subcyst. Adhesions were found to the omentum and small intestine. The omental adhesions were torn loose and the bleeding points ligated. The intestine was attached to the tumor by a tough band a quarter of an inch long and half an inch thick. One end of this band was strongly incorporated into the wall of the gut; the other was similarly united to the cyst. When torn loose, it carried a small portion of the cyst with it. The adhesive band, still attached to the intestine, was then ligated to check the hæmorrhage. The pedicle, which was long and slender, was tied with the Staffordshire knot, as suggested by Lawson Tait, and divided in the usual manner. The uterus was readily returned to its place in the pelvis. A glass drainage-tube was put into Douglas' cul-de-sac, the cavity washed, and the wound closed with silk. Over this a compress and bandage were applied. The patient rallied from the shock completely, and was very comfortable during the rest of the day. A large amount of serum was discharged through and around the tube over night. The next morning, the 13th, the pulse was 126, the temperature normal; at 6 in the evening, pulse 130, temperature 101⅛; at 10 o'clock, pulse 121, temperature 100¼. At that time she felt so well that she asked permission to get up and walk. She had taken nourishment regularly with relish. On the morning of the next day (the 14th) she complained of pain. There was considerable tympanites. Her suffering increased until the morning of the 15th, when she died, sixty hours after the operation. The tympanitic distension was enormous. A rectal tube had no effect in relieving this obstinate symptom. Four hourly doses of epsom salts proved inert. The bowel seemed to be paralyzed. Dr. Blake, who made the post-mortem, says that there were indications of some peritonitis; that the pedicle was all right; that where the intestinal adhesion occurred the gut was thickened and sausage-like for two and a half inches.

I suppose that peristalsis had been arrested by the ligature of the intestinal adhesion. There was probably the condition of things described as "hernia littrica," in which a portion of the wall of an intestine becoming constricted, symptoms of obstruction appear. If instead of *ligating*, the part of the gut attached to the tumor had been excised, and its edges sewed together with catgut, her chances of recovery would have been better. It was the hernia that caused the tympanites; the tympanites in turn produced death by exhaustion. The temperature never exceeded 101½. The facts of interest were:—the extreme uterine prolapsus, which completely obliterated the vagina; the hernia, and the great tympanitic distension which it occasioned. The tumor weighed thirty-two pounds. The patient was confirmed in the opium habit.

CASE II. Miss Mary N——, of Newark, Ohio, unmarried, age 32, was well until November, 1883, when from exposure, the menses were interrupted. She was confined to bed a few days with pain. There was some flatulent distension of the bowels. Later, a small, movable lump, as large as a hen's egg, was noticed in the region of the right ovary.

Menstruation was regular, lasting two days instead of a week as before, and with a diminution of discharge while it continued. She came to the city last May to learn whether she had a tumor. She was told that she had, and an operation was advised. Early in July, just after the menses, she entered the "Home." The usual preparatory treatment was enforced for two days. On the tenth of July the operation was done in a cottage built for the purpose, Dr. J. W. Hamilton, Dr. Blake and Mr. C. S. Hamilton acting as assistants.

A cut, 2¾ inches long, having been made, a multilocular cyst was exposed, which was found to be free from adhesions. The pedicle was slender and of good length, so that it was easily treated. The cavity was carefully cleansed by sponging, and the wound closed by Hunter's method. A single silver wire suture was passed through all the tissues in the middle of the wound.

Catgut continuous stitches closed the peritonæum and muscular layers, while the superficial structures were supported by silk. Thus the cavity was practically sealed. Antiseptic dressings were applied and remained unchanged for a week. These were such as are now used at the Woman's Hospital in New York.

Iodoform was dusted over the wound, then iodoform gauze, bichloride gauze, absorbent cotton, strips of adhesive plaster, rubber tissue and an abdominal bandage were neatly applied. When upon the eighth day, the dressings were removed, it was found that primary union had occurred. There was a slight trace of pus about the points of insertion of the silk. There was no odor whatever from the wound.

With the exception of a few days' nausea, resulting from the use of morphine, convalescence was uniformly satisfactory. The temperature at no time rose above 100¼, nor did the pulse exceed 102. The tumor weighed 7½ pounds. The patient returned to her home about the fortieth day, and continues in perfect health. Success in this case was due largely to the wholesome surroundings and good discipline; she occupied a new cottage, destitute of superfluous furniture, and built upon land that had been drained for years. The air circulated freely beneath it and through it. Absolute quiet was enjoined, and all visitors excluded. Again, the method of closing the wound, which was rendered thoroughly aseptic by appropriate dressings, undoubtedly contributed to the recovery of the patient.

MEDICAL PROGRESS.

MATERIA MEDICA AND THERAPEUTICS.

A TEST FOR THE PURITY OF IODOFORM.—Dr. Bouma, of Leyden, is of the opinion that the symptoms of iodoform poisoning are due to the presence of impurities in the drug used, and in the *Centralbl. f. Chir.* (Glasgow *Med. Jour.*) brings forward striking facts from the practice of several surgeons in proof of this. He holds that no iodoform should be used which has not been tested for impurities, and states that he has not yet seen unfavorable symptoms arise in a case where this rule has been adhered to. The most reliable test is a modification by H. Azema, apothecary to the Leyden Hospital, of one given by most authorities, and consists in shaking up the iodoform with distilled water, filtering, adding to the filtrate an alcoholic solution of nitrate of silver, and allowing this to stand for twenty-four hours. At the end of this time a slight gray deposit will usually be found at the bottom of the test tube; but anything approaching to a black precipitate (reduced silver) indicates that the iodoform is not pure enough to be used.

Dr. Bouma believes, however, that iodoform which has been kept for some time exposed to light and air may cause evil effects, even though this test fails to detect impurities.

MEDICINE.

PLETISMOGRAPHIC EXPERIMENTS ON FEVER AND ON KAIRINE.—Dr. J. B. Queirolo (*Archives Italiennes de Biologie*) in giving the results of his experiments, refers to the existing views as to the essence of the febrile process. We have, among others, the idea that an increase in the production of heat is due to an increase in organic combustion, that it is due to a diminution in the dispersion of the caloric which proceeds from the body; that it is due to extraordinary biochemical processes; and that there is a great difference in the febrile processes according to their nature.

It is generally recognized that the change in the faculty of dispersing caloric, which the skin has, is of the greatest importance in the production of fever: this has acquired a greater importance to-day since the demonstration of the fact that the retention of heat may of itself cause an increase of temperature, and that in many cases of fever the quantity of heat retained represents the whole of the increase of temperature.

The dispersion of caloric takes place, as is known, through the intervention of the cutaneous circulation; it is then submitted to the influence of the oscillations of this circulation, which are themselves influenced by the functional condition of the vessels. An exact knowledge of the modifications of the peripheral vessels in fever is therefore of great importance. In order to obtain with exactness the oscillations of the cutaneous blood-vessels in fever, Dr. Queirolo has made a series of plétismographic observations in febrile cases. At the same time he studied the modifications produced in the calibre of the cutaneous vessels by kairine, administered in febrile cases. His observations were extended to individuals in a state of health and to those suffering from fever from a variety of causes, such as miasmatic fever, croupal pneumonia, typhoid fever, etc.

The plétismograph was applied to the forearm simultaneously with the thermometer in the axilla and without interruption for a variable length of time, according to the nature of the case, from 4 to 8 hours. All causes which might interfere with the results of the experiment were carefully removed, and the following conclusions were deduced:

As to fever, 1. With the elevation of the febrile temperature there is a constriction of the peripheral vessels.

2. This constriction precedes in time the initial elevation, and the succeeding elevations are themselves preceded by a constriction of the vessels.

3. This constriction is the greater, as the thermic elevation is greater and more rapid.

4. With the decline of the fever there is a dilatation of the peripheral vessels.

5. The dilatation precedes for an appreciable time the decline of the fever.

6. When the decline of the fever is checked the dilatation of the vessels is checked also.

7. These facts are demonstrable in the fever produced by different processes.

As to kairine, 1. Kairine produces a remarkable dilatation of the peripheral vessels in individuals free from fever.

2. In febrile cases kairine lowers the temperature and dilates the vessels.

3. The dilatation of the vessels precedes for some time the lowering of the temperature.

4. When the action of kairine is finished, the fever, in becoming again elevated, is accompanied by a constriction of the vessels.

5. This constriction precedes for some time the thermic elevation.

It is probable that the mechanism by which kairine produces the decline of fever and apyrexia, is, at least in part, the same with that which produces the spontaneous decline of fever and apyrexia.

The mode by which kairine acts upon the cutaneous vessels of individuals in a state of health and in a febrile condition has without doubt a great importance in the genesis of fever.

TREATMENT OF INTESTINAL OBSTRUCTION BY ELECTRICITY.—Bloch, in *Vratch* (*Jour. de Med. de Paris*), gives the case of a patient, 24 years of age, who had not had an operation from the bowels for eight days, and presented an enormous enlargement of the abdomen, with vomiting and hiccough. Purgatives and injections were used to no purpose, when electricity was tried by introducing one pole high up in the rectum, and applying the other pole alternately to different parts of the abdomen. Each application was kept up for from ten to twenty minutes; they were repeated ten times, four times at intervals of about three hours during the first day of treatment, and twice during the second day. The hiccough disappeared after the first application; the patient had a stool after the fourth application. Professor V. A. Manassein has frequently used this method with success for a number of years, in cases of habitual constipation resulting from atony of the abdominal walls and muscular coats of the intestine.

APPLICATION OF ELECTRICITY TO AFFECTIONS OF THE STOMACH.—Dr. Apostoli communicated to the Congress at Copenhagen (*Revue Medicale*) his experience with the continued and constant current, applied to the pneumogastric, upon the stomach, to relieve and cure certain nervous affections manifestly allied to hysteria, such as epigastralgia, gastralgia and vomiting. For some time past he has extended his observations to the gastric troubles of pregnancy and of phthisis. All the dyspepsias and all the reflex or purely nervous vomitings seem to him to be controlled by electricity. He believes, moreover, that this remedy is sufficient to render great benefit in other gastric disorders associated with simple (non-cancerous) affections of the stomach. To make its application the most useful, he lays down the following conditions:

1. He advises a simultaneous action on the two pneumogastrics by a double or bi-polar application, which method consists in placing two electrodes of equal size and of small surface at the interior angle of the clavicle, at a point as near as possible to the trunk of the vagus nerve. Each of the poles should stimulate a pneumogastric (the one positively and the other negatively), so that the action of both shall be restricted to a localized surface and prevent a diffusion of the current.

2. The current must be as constant as possible, and all interruptions avoided during its application.

3. The electric intensity must be proportioned to the receptivity of the subject and to the resistance of the affection to be overcome, the medium dose varying from 5 to 10 and if necessary 15 milliampères, with a facility for increasing or diminishing progressively, according to the indications furnished by the patient.

4. The duration of the application should be, like the intensity, proportioned to the disease attacked, and the application should not cease until some effect is produced; it should be prolonged until the patient declares that he is better, and not be suspended until a calmative effect is established.

5. Galvanization having rather more of a curative than a preventative action, it will be preferable to make the application during digestion, to combat either dyspepsia or vomiting; therefore the patient is made to eat or drink previous to the application, and the current possesses the property of causing digestion or of arresting impending vomiting.

6. The applications in the beginning should be as frequent as possible, and all digestion should be aided and completed by the galvanization; later, the intervals can be increased in accordance with the amelioration.

7. Every application, if properly made, should be well tolerated and without any consecutive eschar; in order to prevent too much pain and all danger of cauterization, the tamporis should be carefully covered with very soft chamois skin, under which should be placed one or two supplementary layers of moist agaric, to concentrate to it a part of the galvano-caustic action. Any battery will answer, provided that it is furnished with a collector that will admit of a grouping two by two, or better one by one. A galvanometer of intensity divided into milliampères must of necessity be inserted into the circuit.

8. A comparative chemical study of the two processes of galvanization (mono-polar or bi-polar) of the pneumogastric, gives the preference to the latter. The unanimous opinion of all the patients who have been called upon to judge between their relative values, has been that the simultaneous galvanization of the two vagi nerves in the neck (bi-polar) is the most rapidly active and efficacious.

9. In conclusion, the continuous galvanic current, well regulated, and localized, is the medicine for dyspepsia, gastralgia or vomiting. If these symptoms be purely nervous or reflex it exercises an immediate and sovereign action upon them; in all other cases, without supplanting classic therapeutics, it is destined to serve as an active auxiliary.

ON THE DILATATION OF THE STOMACH IN INFANTS.—Dr. J. Comby (*Archives Générales de Médicine*) calls attention to this affection in the following manner:

The dilatation of the stomach, so well studied in the adult, particularly since the washing out of the stomach has come into common use, has been completely neglected, not to say denied, in infants.

Nevertheless, in children more frequently than in adults, the alimentary canal is the source of numerous disorders; it is the axis about which gravitates all the pathology of the new-born child, if we except congenital and hereditary diseases.

The most notable fact accompanying his observations, is that the dilatation of the stomach in infants is habitually associated with rachitis.

This association is not fortuitous, there is between the two affections a relation of cause and effect; digestive troubles precede and predispose to rachitis.

The onset of the disease is insidious and its symptoms are those of a chronic disease.

The physical signs consist in an exaggerated development of the abdomen, of tympanism and of succussion.

The functional symptoms exhibit themselves sometimes in the digestive organs (dyspepsia), sometimes in the nervous system, (convulsions, insomnia), sometimes in the skin (eruptions, urticaria), and sometimes in bronchitis.

The prognosis is serious, because the dilatation may extend into the second stage of childhood, and even to adult life, as shown by several cases.

The unique cause of dilatation of the stomach in infants is bad alimentation; infants that are bottle-fed, that are given solid food prematurely, or that are weaned abruptly, are the ones who present this condition of dilatation of the stomach.

Nevertheless, it has been noted also in infants nursed at the breast, who suckle too freely or too often.

The prophylaxis consists in nourishment by the female breast as far as possible, and the restriction of the amount taken to within reasonable limits.

It is necessary to abolish the bottle, and to deny all feculent and other indigestible substances.

It is necessary to delay the period of weaning and gradually supplement the breast milk by an appropriate diet.

The dilatation once established, it is treated by diet; milk for the new-born; dry food for older children.

Frequently it is necessary to have recourse to washing out the stomach.

A CASE OF CHYLOUS DEPOSIT IN THE ABDOMEN.—Dr. Francis Nickerson, of Lowell, Mass., communicates a curious case of this character to the Massachusetts Medical Society (Medical Communications). The patient was 55 years of age, deaf and dumb, a carpenter or cabinet-maker. His father died of consumption. Height five feet three inches; weight 105 pounds. Fairly healthy in appearance, carriage erect and firm, movements quick and nervous. Figure not muscular, well-formed, with a rather full abdomen. Complexion light, hair white since 17 years of age; near-sighted; one testicle. General health good. On Jan. 15, 1877, was obliged to give up work and go to bed on account of a sudden attack of pain shooting from the lower part of his back directly forward through his abdomen, and accompanied by vomiting. On medical examination a tumor simulating a distended bladder was found. The catheter drew off only a few drops of limpid urine. Aspiration was then resorted to, which resulted in the extraction of about two quarts of milky fluid, with entire relief to the patient. After the aspiration the tumor collapsed to a level with the surface of the abdomen, and in a day or two the patient was about his work, apparently as well as ever. This experience was repeated March 21, Oct. 3, 1877, and July 28, 1878, except that every recurrence of the tumor was preceded by an exacerbation of pain lasting for about three days, while the quantity of fluid diminished so that at the last aspiration scarcely twenty ounces were withdrawn. Some months after this the patient noticed a partial refilling of the tumor, and a subsequent retrocession thereof. The aggregate amount of fluid aspirated was about five quarts. After the first aspiration up to a year and a half ago he was subject to a dull ache in the lower part of the back, which was easily converted into a severe pain, shooting forward to the site of the tumor above described, by long walks or riding. This pain was also brought on when, having a desire to go to stool, he did not satisfy that desire at once. He had at times, also, some pain in the act of micturition. During the period just mentioned vomiting occurred at various intervals. The matter vomited consisted in the main of the same milky-looking fluid which was taken from the abdomen. Has an aversion to milk and dislikes fat. The pain and vomiting had been growing less marked up to a year ago last March (this paper was read June 11, 1884), when his last attack of vomiting took place while he was at work. This attack was accompanied by a loose discharge from the bowels, in which, as well as in the vomitus, the milky fluid, as he says, reappeared. Ever since this time he has been very well in every way.

A specimen of the fluid withdrawn by the first aspiration was examined by Dr. Nickerson a few hours after its extraction. Its general appearance was that of milk. After standing a few hours it exhibited a soft and generally diffused coagulum. After remaining a week at a temperature ranging from 60° to 68° F. there were no signs of decomposition. Odorless; mawkish taste; reaction alkaline; sp. gr. 1018. Ether extracted from it largely a clear, yellow fluid, in which, on the addition of nitric acid, an albuminoid precipitate was thrown down. Under the microscope were seen large quantities of molecular granules, fat globules, occasional crystals of cholesterine and granular corpuscles of different sizes, in some of which nuclei were revealed on the addition of acetic acid.

An examination by Prof. Edes, of Boston, confirmed the foregoing, with the addition that the other extract not only precipitated with nitric acid, but also, after being boiled with an alkali, precipitated with acetic acid, which would assimilate it more closely to caseine. No trace of urea or anything like urinary pigment.

In his search for precedents to the foregoing case, the writer refers mainly to Prof. Busey's published works bearing upon this subject, as being the most complete and satisfactory, but does not find analogous cases in them. He finds three cases in an essay on dropsy by Donald Monroe, Lond., 1865; a case in Percival's essays medical, vol. 1, Lond., 1788; a case by Quincke, Deutsches Archiv für Klin. Med., vol. 16, p. 121; a case reported in this journal (JOUR. AM. MED. ASS'N, vol. 1, p. 120), as taken from the *Gaz. Med.* de Strassbourg; and a case by Dr. Mastin, *Amer. Med. Weekly*, Louisville, Ky.—all of which suggest the idea that the fluid obtained from this patient was chyle from ruptured lacteals, and that this rupture may have been due to a strain in the abdominal region, possibly on vessels already distended. In only two instances does he find men-

tion made of the aseptic character of the chylous fluid, namely: Quincke's case, in which the fluid extracted by ether remained fourteen days without any change in looks or smell, and Dr. Weaver's case, *Med., Surg. and Pharm. Repository*, Aug., 1814, in which the milky fluid was kept for several weeks without any appearance of decomposition.

The symptom of chylous vomiting finds a single precedent, *New England Jour. Med. and Surg.*, vol. 12, p. 4. As to the symptom of chylous discharge from the bowels, there is only the testimony of the patient himself.

OBSTETRICS AND GYNÆCOLOGY.

A New Treatment of Perimetritis by Electricity.—Dr. G. Apostoli (*Journal des Connaissances Medicale*) has used this method for the past two years to the exclusion of all other modes of treatment, in a number of cases which have all been benefited to a satisfactory, rapid and permanent cure.

The inflammation of the peri-uterine tissue, designated as perimetritis, or pelvic cellulitis, is very common and one of the most difficult to relieve satisfactorily. Electricity methodically applied gives great relief, either at its commencement in the acute form, to prevent suppuration, relieve pain and abort a commencing phlegmasia; or in its chronic form, to accelerate convalescence and hasten the resorption of an exudation. It can be used either by means of the induced or faradic, and galvanic or continued currents.

The faradic or induced current can be applied by two methods. The first is the old one of placing one pole in the uterine cavity and closing the circuit by placing the other pole on the abdomen above the pubis. The second method is that of placing both poles in the uterus by means of a sound. This latter has the advantage of being more readily applied, less painful, and more active, localizing the action of the current to the uterus, and allowing of a greater degree of intensity to the current. Between the electrical treatment of metritis and perimetritis a distinction should be made. In metritis the faradic current should come from a bobbin provided with a short, thick wire, from which the intensity is as strong as possible and continued from three to five minutes. In perimetritis on the contrary the bobbin should have a long and fine wire, to produce a slight stimulation which should be progressive and prolonged for some time. The rules laid down to aid in the application of this treatment are as follows:

1. Introduce the sound into the uterus as gently as possible, arresting it with the slightest obstruction.

2. The operation should never be painful, the patient should not feel the sound at all, and the current of electricity but very little.

3. In those cases where it is impracticable to introduce the sound into the uterus, there may be substituted for the double uterine faradization, a double vaginal faradization, by electrizing the vagina, one pole being upon the neck of the uterus and the other upon the wall of the vagina.

4. The current should be used at first with but slight intensity,—the writer uses a battery constructed by Gaiffe with two Lèclanche elements.

5. The application should be somewhat extended in time, lasting from five to thirty minutes, generally about 10 to 15, or until the patient declares of her own accord that she feels better.

6. Each application should produce its own benefit immediately; there should be a sensible improvement from the beginning, a greater facility in walking, a diminution of pain, but this relief will not be durable until after several applications.

7. This treatment is indicated even in the acute forms, where the affection can be aborted, if suppuration has not begun, and even then will diminish it considerably.

8. In the subacute and chronic forms it is not necessary to be so careful about regulating the strength of the current, and the intensity can be increased to a degree which would be dangerous in the acute form.

9. It is the simple chronic form where there is neither fever nor painful reaction, that the faradic current of tension can be combined advantageously with the current of quantity, applied for a short period of time to stimulate more briskly the muscular contractility, to increase the circulation, and to produce, as Tripier puts it, a true interstitial massage, to aid in a more active reabsorption of the exudations.

(*b*) The continued current, applied as an intra-uterine chemical galvanocaustic, may, in the subacute or chronic state, never in the acute, serve as a useful auxilliary to the faradization. It must always be used in small doses, 20 to 40 milliampères, and of short duration, lasting from three to five minutes, it must never be painful, be well supported, and stopped if the patient complains of it.

Electricity in Labor.—Dr. Kilner read a paper before the London Obstetrical Society on the use of induced currents during labor. The effect produced by the current consisted in a diminution of pain, tended to diminish the fatigue, and to prevent post-partum hæmorrhage, render the pulse more regular, increase the frequency and force of uterine contractions, and prevent vomiting. But it did not modify the pain resulting from constricted vulvæ, or that which came from the introduction of an instrument in instrumental delivery. Out of 300 cases, Dr. Kilner had only two of post-partum hæmorrhage. Moreover, the current did not bring on contractions in cases where there was urgent need of them.

When the induction current was used for an hour to an hour and a half, its sedative action was felt, and it did not increase the contractions. In several cases it produced violent and almost continuous contractions. In one case the contraction continued for 15 minutes.

To diminish pain, the induction current is preferable to anæsthetics, as its action can be controlled at will, and it does not cause vomiting. Dr. Kilner has never observed uterine rupture by the contractions, so frequently prolonged and produced by the current.

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BACTERIA AS THE CAUSE OF SUPPURATION.—The latest report to the Scientific Grants Committee of the British Medical Association has been made by W. Watson Cheyne on Micrococci in Relation to Wounds, Abscesses and Septic Processes.[1] It is of interest, as although the experiments described were made to test the correctness of the views advanced by Dr. Ogston in regard to the same subject some time ago, they do not agree with his conclusions. Dr. Ogston has affirmed that micrococci are present in all acute abscesses, indeed wherever suppuration is present or imminent except when it is caused by burns or blisters. He also believes that the common micrococci that exist in the intestines are one and the same with the virulent forms that excite inflammation, but as they do not readily grow in oxygen and lose their virulence when grown in it, they do not always excite morbid action. If, however, they are grown in eggs without oxygen they regain their toxic powers. The same micrococci can, under certain circumstances produce septic intoxication, septicæmia, pyæmia, erysipelas, etc.

Whether or not the micrococci found in abscesses and wounds can thus be rendered harmless by the access of oxygen to them is a matter of much interest and importance.

Some years ago Mr. Cheyne published the result of some experiments which he then made in order to ascertain whether micrococci are present in all acute abscesses. He made his tests by cultivating or attempting to cultivate them in meat infusions. He obtained micrococci in only seven out of thirty-two cases tested. His lack of success he seems now willing to assign to the imperfection of his method and to the lack of the methods of staining since pointed out by Koch.

In the present report he describes his more recent experiments.

They were made, however, with infusions, and before the method of cultivation on solid substances had come into use. In regard to the use of infusions of various kinds as media, Mr. Cheyne makes some very just remarks, which it may be worth while to quote: "My own experience with fluids leads me to think that the risk of contamination in these experiments has been much exaggerated since the introduction of solid cultivation materials, and that there is too great a tendency to underrate and reckon as worthless researches in which fluids alone are employed. No doubt researches with fluid media are much more difficult and laborious than with solid, but with care and judgment excellent work has been and can be done in this way."

The first series of experiments were made with micrococci from an acute abscess of the groin. Streptococci (or chains) were found in the pus, but they did not grow in meat infusion. Two days later micrococci were found, but no chains. This time meat infusion was successfully inoculated. The resulting micrococci were cultivated through several generations, and fluid containing them was injected into rabbits in various parts of the body. Nineteen experiments were made; in fourteen there was no effect produced by the injection; in three there was slight swelling and redness, which passed off; and in two there was found a slight amount of cheesy inflammatory exudate, containing micrococci. These rabbits died of an epidemic disease which was prevalent at the time.

Seven eggs were inoculated with the same infusions, following as nearly as possible the method of Dr. Ogston. In only one of these did the micrococci grow. These were injected into two parts of an animal, without producing any effect.

A second series of experiments was interrupted by the epidemic among the rabbits. The purulent matter was obtained from sinuses which had been scraped and washed out with zinc chloride, after an amputation for carious disease of the ankle. Micrococci were found and cultivated in infusions, which were injected into rabbits without effect. Eggs were also inoculated, but micrococci developed in only one of five trials. They proved innocuous on injection in animals.

[1] *British Medical Journal*, Sept. 20, 1884.

A third set of experiments was made with micrococci obtained from a wound made in an excision of the ankle joint which was treated aseptically and followed an aseptic course. They grew well in meat infusions, but produced no ill effects when injected into animals. They developed better in eggs than had the micrococci in former experiments. Six out of eight eggs were affected. When the micrococci of the eggs were injected into rabbits no injurious effect was noticed. In four cases slight redness followed, but quickly passed off.

Several points of difference are noticed between these experiments and the conclusions arrived at by Dr. Ogston. In the first place, micrococci taken from wounds and abscess proved harmless to animals, whether first grown in infusions or eggs; and therefore cannot be the cause universally of suppuration, as Dr. Ogston asserts.

It appears, secondly, that the growth in eggs away from the air does not contribute to their virulence, nor do they grow as well there as in infusions. Indeed, Mr. Cheyne found that undiluted egg albumen is not a good nidus for the development of micrococci, whether oxygen was admitted to them or not. For when he inoculated eggs that were broken and the albumen exposed to the air, with proper precautions to obtain a pure cultivation if any, he did not succeed in propagating the micrococci.

These experiments we quote more to point a lesson of conservatism than for any other purpose. It is common to-day for many physicians to conclude as soon as bacteria are discovered in connection with a morbid process, that they are its cause. Such a conclusion should be adopted only after most careful experimentation by different persons, only when by repeated trials a disease is shown to occur uniformly after inoculation with bacteria. Mr. Cheyne's experiments may also be regarded as not settling the question both because not sufficiently numerous and on account of the methods of cultivation used, which may be called in question by some, though probably they are as accurate as the dry method. The uniformity of Mr. Cheyne's results makes his conclusions most probable, and at least, throws the question fully open as to the uniform generation of suppuration by bacteria.

Medical Societies and Their Methods of Work.—There are three legitimate and important objects to be accomplished by the organization and maintenance of medical societies, namely, the mutual interchange of views and facts of clinical experience by which the observations of each become more nearly the common property of the whole; the planning and execution of special investigations for the development of new facts, and the solving of problems requiring the coöperation of several observers working to the same end; and the cultivation of social intercourse, personal friendships, and the establishment of union and harmony among all those pursuing the same calling.

The first and last of these objects have hitherto chiefly occupied the attention of our numerous society organizations, while the second has attracted but little attention, although of more importance for the promotion of scientific knowledge than both the others. And even in the accomplishment of the first, the time is so far occupied by the reading of papers of which the members have little or no notice beforehand, and consequently can not be well prepared for discussing, that the real interchange of views and the eliciting of facts of individual experience are far more limited than is desirable.

But the time has come when much more of the time of all our medical societies, whether local, State or national; whether general or limited to some specialty, should be spent in devising well considered lines of investigation, directly calculated, on the one hand to induce a more general practice of recording facts and cases by all practitioners, and on the other, to institute original experimental investigation directly calculated to develop such facts as would reliably advance our knowledge in some department of the wide field of medical science and art. Some beginnings have been made in this direction, as seen in the work of the Standing Committee on the relations of atmospheric conditions to the prevalence of acute diseases, of the American Medical Association; in the work of the Committee of the British Medical Association on the collective investigation of disease, and in here and there items of special investigations in local societies. Of these latter the Suffolk District Society of Massachusetts affords one of the best examples in its work of the past year. Its investigations on the subject of contamination of waters by sewerage, the best practical methods of epuration of the same, the quality of the milk supplied to the people of Boston and the best method of transporting the same from the producer to the consumer, indicate an activity, and a considerate practical direction to its work that is worthy of imitation.

American Gynæcological Society.—The ninth annual meeting of this Society commenced in the Palmer House, of this city, on Tuesday morning, Dr.

Albert A. Smith, of Philadelphia, President, in the chair. The number of members in attendance was not large, but the time was occupied through the day in the reading of several important papers, and the discussion of the questions to which they gave rise. In the evening the members of the Society were entertained at an elegant banquet given by the Chicago Gynæcological Society. Dr. A. Reeves Jackson presided at the table, and the occasion appeared to be highly enjoyed by all present. We expect a full report of the proceedings during the several sessions in time for the next number of the JOURNAL.

SOCIETY PROCEEDINGS.

SUFFOLK DISTRICT MEDICAL SOCIETY.

SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

ALBERT N. BLODGETT, M.D., SECRETARY.

June 7, 1884. The meeting was called to order at eight o'clock, Dr. E. M. Buckingham in the chair.

After presentation of a summary of the report of the previous regular and special meetings of the Section the reports of committees were called for.

The Secretary announced that the committee appointed at an earlier meeting to take into consideration the question of the milk supply of Boston had prepared a partial report, which was in the hands of the Secretary, who, by request, read as follows:

PRELIMINARY REPORT OF THE COMMITTEE APPOINTED TO TAKE INTO CONSIDERATION THE MILK SUPPLY OF BOSTON.

The committee appointed at the meeting of the Section on Feb. 27, 1884, "whose duty it shall be to report upon the whole subject of the providing of milk for Boston, and suggest the means of obtaining it pure for its citizens," have attended to that duty, and have held several meetings, at which all, or nearly all, the members of the committee have been present. They have visited the section of country from whence most of the milk supply of Boston is derived, and have endeavored to ascertain the manner in which it is treated at the farm where it is produced, and have followed its history as nearly as possible until it is delivered in the city. The committee has on several occasions had the benefit of the advice and counsel of those interested in the purity of our milk supply, and has considered the question of a change in the present methods of transportation and delivery, and has carefully examined several forms of cans for the transportation and delivery of milk, and has also made careful study and examination of many samples of milk obtained from different sources representing some of the various grades of milk sold for consumption. The committee has been so fortunate as to receive the offer of every facility for the continuance of its work from the office of the State Board of Health, as well as from that of the City Board of Health, and has been promised the assistance of the Milk Inspector of Boston in its efforts to devise a means for improving the quality of milk supplied to the people.

A work of such magnitude as that which has been intrusted to your committee could not be concluded in the limited time since the appointment of the committee, and it is desired at this time to present a preliminary report of progress with the suggestion that the committee be continued and allowed to prosecute its labors, and report to the Section at some future meeting of the Society.

The labor intrusted to the committee seemed legitimately to commence at the source of supply, the farmer's stable, where the cows are housed, and consequently one member of the committee has made a personal inspection of the farms and dairies in several localities. The investigation was made in four towns in Worcester county. It is the usual custom of the farmers after milking one or more cows to strain the milk into the eight-and-a-half-quart cans furnished by the contractors, which, when full, are set in cellars during the winter months, and in warm weather lowered in springs, wells, or put in tubs supplied with running water. A can partially filled in the morning is mixed with enough evening milk, after it is cooled, to fill the can. A letter or mark with chalk on each stopper indicates from whose farm the milk is obtained. Just before the milk is called for by the collector the stoppers are put in place. During the evening it is transported to the railroad station and put on board cars especially designed for this purpose. In the winter a small stove is used to prevent freezing. In the summer the cans are iced with great care. The milk arrives in Boston early the next morning, and is delivered to the distributors during the day.

Many farmers are careless in cooling the milk, and as a result it is returned sour by the contractors. This is nearly a total loss to the farmer as he receives no pay, and often the cream has been removed.

Many of the cows were very dirty, their hind flanks were covered with manure an inch or more thick, which must often drop into the pail, and is, no doubt, the deposit so frequently found in the consumer's supply. The contractors often complain to the farmers for not being more careful in this regard.

If a farmer waters the milk it is immediately returned, and to every man who comes to the car it is whispered very privately that Mr. W. has been caught, and a "request not to say anything about it." In a few days all in the town know it, and if the man chances to be a church member his punishment seems to be adequate.

None but "grade" cows are kept for supplying "railroad" milk, and their food is such as to improve the quantity rather than the quality. In the winter English hay, shorts, cotton-seed meal, roots, and occasionally corn meal are fed. In the summer grass and corn fodder.

But very few of the farmers have silos.

The prime defect in the present system of milk

supply appears to your committee to consist mainly of two factors, namely, the employment of such a kind of can as admits of being opened without detection, whereby the milk may be variously manipulated, in the form of addition or subtraction, or both, and which gives to the consumer a deteriorated quality of milk, as the analyses of the State Board of Health conclusively show, the proportion of specimens which were found to be adulterated amounting to 90 per cent.

The other defect in the present system of supply is the habit, now almost universal, of keeping the milk received on one day until the next morning, thereby adding a considerable amount of time, sometimes as much as twenty-four hours, to the age of the milk when it finally reaches the consumer. This is a disadvantage in another respect, as it exposes the milk to whatever deleterious influences or infective processes may be contained in the place of storage, where it is necessarily exposed to the air in the process of mixing and putting into small cans for family service. The temptation to adulteration which here exists should not be forgotten, and it is at this part of its journey that by far the larger part of all adulteration is committed.

Any practical method of delivery to consumers immediately on the arrival of the milk in the city depots, and of avoidance of the process of mixing and recanning, would seem to offer a remedy for these two greatest dangers to which milk is exposed.

It might be said that it would only be inviting the farmer to adulterate the milk instead of allowing the retail milkmen to do so, but this would be less likely to occur, as any particular dairy could be easily identified, which is not possible under the present system.

Another disadvantage attending the prolonged keeping of milk, arises from the necessity of adding some chemical substance to prevent fermentation and souring. This addition may not be directly injurious, but it is an adulteration, and the addition of any foreign substance to milk should be condemned. It is also to be feared that the additions made to milk, particularly that sold in stores, are not always harmless.

The committee has examined several varieties of cans and glass jars for the transportation of milk from the source of supply. The system of glass jars has never been practically tried in this city, but from places where this system has been introduced it was learned that the loss by breakage is very considerable, amounting, on an average, to a complete renewal of the entire stock of jars once in three months. Your committee is unable to find any place where this system has long remained in operation except in the case of certain private individuals who carry on a limited business in milk, and charge an unusual price. This system seems entirely unsuited to the requirements of a general milk supply, and your committee cannot recommend it. A can holding sixty quarts was brought to the attention of your committee, and illustrated by a model. This can is of steel, made without solder, and is of strong and durable character. It is provided with a large opening for cleansing purposes, and may thus always be thoroughly freed from impurities before receiving milk. This can is to be filled at the farm of supply, and when full a cover is placed in the opening and securely fastened and sealed with lead so that it is thereafter impossible to obtain access to the interior of the can until the seal is removed by an authorized person. In this can the milk is cooled and transported to Boston in the same manner as is now done with the ordinary can. The milk can be withdrawn as required, only by inverting the can, when it flows freely from a valve-opening, which closes automatically the instant the milk ceases to flow through it. It is practically impossible to tamper with the contents of this can after the cover is adjusted, and efforts to introduce water by the orifice for pouring out the milk were not successful. Air is allowed to enter the can to replace the milk as this is poured out by means of a second guarded opening, through which it is impossible to introduce any foreign substance whatever. The advantages claimed for this can are its imperishable nature, its ease of cleansing, its perfect protection of the milk from manipulation or contamination, the thorough mixing of the milk at every withdrawal by the necessary inversion of the can, the impossibility of removing the cream from the milk, and a saving of several hours of time in the age of the milk when it is delivered to the consumer.

The objection was raised that the adoption of this can would preclude the possibility of obtaining the milk of one cow separately for the use of infants or invalids. The committee considered this point carefully, and came to the conclusion that this constituted no objection inasmuch as the milk now furnished to the people of Boston is almost invariably brought to the city in large tin cans, and is put into service cans for family use at the milk sheds after its arrival in Boston. It is, therefore, practically impossible to secure the milk from one single cow for any purposes whatever. Your committee also came to the conclusion that one cow's milk presented no advantage to recommend it above the mixed milk from a dairy of several cows. Indeed the advantage seemed to be on the side of the mixed milk, as this constitutes a protection to a certain extent against the perturbations of health and of the quality of milk supplied by any one animal.

Your committee also desires to point out the fact that the majority of people taking milk from milkmen are not acquainted with the varying character of this secretion at different times of year and under different conditions of health in the cow.

During the months when the cows are fed on hay the milk is generally much paler and somewhat thinner than when the cows are at pasture. By demanding at all seasons of the year a quality in milk which exists in it at only one season the people unconsciously encourage adulteration of milk, and thus defeat their own best interests.

With the hope of placing a supply of pure and wholesome milk within the reach of the inhabitants of the poorer parts of the city, and especially of sick children and invalids, your committee would suggest the establishment of "milk stations" in accessible and well-known localities, possibly in connection with the district dispensary establishments, or at certain

drug stores, to which the poorer people, and particularly the sick, might be referred by physicians or others, and by means of a ticket or voucher obtain a supply of pure milk at a cost within their means, instead of buying, as is now too often the case, milk which has been diluted sometimes to the extent of 60 per cent.

It is in the poorer parts of the city that the greater proportion of adulterated milk is to be looked for, and therefore it forms the supply of those who most need a pure and wholesome article. There can be but little doubt that the rate of mortality among children might be materially affected if it were possible to furnish pure and fresh milk to the inhabitants. The "depots," as suggested above, seem to your committee to be a step in this direction.

Signed by the committee.

HENRY O. MARCY, *Chairman*,
HENRY J. BARNES,
E. W. CUSHING,
LLOYD F. ABBOTT,
ALBERT N. BLODGETT, *Secretary*.

The report of the committee was accepted, and, in accordance with the suggestions contained in the paper, the committee was continued, in order that its labors may be prosecuted still further, and the utmost benefit derived from the thorough investigation of an important branch of domestic supply, upon which the lives and health of a large proportion of our population are more or less directly dependent.

The hour being already somewhat late it was voted that the reading of the papers appointed for this evening, by Dr. P. C. Knapp, on "Observations on the Cutaneous and Tendon Reflexes;" and Dr. F. Minot, on "Three Cases of Distended Gall-Bladder," be postponed to the next meeting. The readers having expressed their approval of this arrangement, and there being no further business before the Section, it was voted to adjourn, at 9:15 o'clock.

CHICAGO MEDICAL SOCIETY.

The regular semi-monthly meeting of this Society was held in Parlor 44, Grand Pacific Hotel, on Monday evening, September 15, at 8 o'clock. The President, Dr. D. A. K. Steele, in the chair. Dr. L. H. Montgomery, Secretary.

Dr. C. W. Earle read a brief paper on "Congenital Malformation of the Stomach," reciting the case of an infant that lived twelve days. Its life was sustained by very minute quantities of nourishment, he, during the time, being unable to diagnose the ailment. And it was only by permission of friends that an autopsy was made, when the trouble was ascertained. It consisted in there being no continuation from the stomach through the pylorus to the intestine, nor was there any communication whatever between the stomach and duodenum. The child's biliary secretion seemed healthy enough and was passed from the bowels, as well as the meconium.

The speaker also read a report of a case of bony tumor of the female pelvis and exhibited the specimens of both the above cases. The latter's weight was 3½ pounds. Both of which were believed to be rarely met with. They were accordingly, but informally discussed.

The Secretary, Dr. Liston H. Montgomery, presented the following resolutions and moved their adoption:

WHEREAS, From present reports and indications in foreign countries, cholera and yellow fever (both pestilential diseases) prevail, and as the latter especially is always assuming a threatening attitude toward us, and is not conducive to our national prosperity, nor to public health, and should, if possible, be averted with earnest and efficient sanitary measures, and

WHEREAS, Cholera may make its appearance on this continent ere another twelve months should elapse, and should likewise, if possible, be averted or restricted to the narrowest limits, therefore,

Resolved, That it is the sense of the Chicago Medical Society to have that department of the government relating to public health, recognize the services of able sanitarians who constitute the National Board of Health, for the purpose of coöperating with municipal, State, and other organizations of a similar kind, and that a committee of seven (7) members of this Society be appointed by the Chair to draft suitable resolutions in behalf of said National Board.

Resolved, Furthermore, that this committee present said resolutions to the Congress of the United States, memorializing that body to make a sufficient appropriation for the purpose of said Board for scientific investigation in the prevention and restriction of epidemic, preventable and pestilential diseases.

We believe this action should be promptly taken at the coming session of our national legislature, and that a thorough sanitary organization of the nation should be recognized, and with it absolute enforcement of the best means for the protection of her citizens, and the improvement of our inter-State sanitary condition.

The mover of the resolutions stated that, inasmuch as they had been published on the postal card announcements, every officer and member of the Society, which consisted of about 276 members, had (he presumed) become familiar with the object aimed at in presenting them. He desired a full discussion, and to hear the views of each member present, if time permitted. If they are adopted, broad-minded, philanthropic men in official life will see their value when the first case of cholera appears on our borders, which we trust may never occur, but which is by no means impossible by next June. Then we will wish that thorough vigilance and a more thorough organization had taken place. The time, therefore, for more effective measures to be taken, is to begin now—months before the probable advent of the disease. It seems to me that the scientific, sanitary and commercial interests of the nation all demand the perpetuation of its National Board of Health. The resolutions were promptly seconded by Drs. R. E. Starkweather and H. J. Reynolds, and after a lengthy discussion, which was participated in by many members, each of whom favored the object of the resolutions, the motion to adopt *unanimously prevailed*.

The President stated that he wished a little time to

consider the appointment of so important a committee as is called for by the resolutions.

Dr. Edmund Andrews offered the following motion, which was duly seconded by Dr. C. E. Webster: "That this Society hereby express its thanks to Dr. Vincent L. Hurlbut for the gift of a very valuable collection of books and pamphlets, consisting of 300 volumes, to the Library Committee of the Society, for the Chicago Public Library." In behalf of the Library Committee, the speaker continued by stating that there are on the shelves of the city Library 1,200 volumes for medical reference. The Library authorities have bound, at their own expense, 75 volumes. The report was considered a flattering one, especially when the project to establish a medical department by this Society, to the Public Library was inaugurated so recently as last spring. The closing remarks of Dr. Andrews elicited a hearty and unanimous vote of thanks for Dr. Hurlbut.

The chair announced the following gentlemen to constitute the committee as provided for in the resolutions previously adopted: Dr. O. C. DeWolf, Dr. R. E. Starkweather, Dr. L. H. Montgomery, Dr. John Bartlett, Dr. J. H. Etheridge, Dr. A. R. Jackson, Dr. J. H. Hollister.

Dr. H. A. Johnson asked to be excused from serving on the committee, for the reason that he was the representative from Illinois on the National Board of Health, his resignation not having been accepted by the President of the United States. He took pleasure in extending an invitation to the committee to call upon him at his library, and he would render to its members all the assistance he could, and impart any information he had received from his experience as a member of the National Board of Health. His library also was at the disposal of the committee.

Dr. J. H. Etheridge then moved that the committee be authorized to present their resolutions to the Society for a final consideration, and then submit them to Congress.

The motion was carried, and the Society adjourned. L. H. M.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

The regular annual meeting of this Society, which had been called to commence its sittings in the Representatives' Hall of the State House in Springfield, Ill., at 10 o'clock A. M., of Sept. 23, 1884, did not organize for business until 2 P. M., on account of the copious rain and the small number in attendance at the morning hour. At 2 P. M., the Society was called to order by the President, Dr. B. M. Griffith, of Springfield. An opening prayer was made by Rev. R. O. Post, and in the absence of Gov. Hamilton, Judge Matheny welcomed the members of the Society in a brief and appropriate address. This was responded to in equally appropriate terms by Dr. Joseph Eastman, of Indianapolis. These formalities having been completed, Dr. Wm. A. Byrd, of Quincy, Ill., read an interesting paper on the nature of "Gall-Stones," and the most effectual means of prevention, and of treatment after they are already formed. After some discussion, the Society adjourned until 7:30 P. M., when on reassembling, the President, Dr. B. M. Griffith, delivered the annual address. He pointed out with clearness the objects of the Society, the best methods of securing them, and the more important relations of the profession to the community. After the address, the members were cordially and elegantly entertained at the residences of Drs. Griffith, Million, and Buck.

Second Day.—The Society was again called to order by the President at 10 A. M., in the Senate Chamber. Dr. Archibald Dixon, of Henderson, Ky., read a paper on "The Work of the Past Year." Dr. R. E. Houghton, of Indianapolis, Ind., one on the "Relation of Nerve to Muscle, being the basis of Antipyretic Treatment in Fevers and Inflammations," and Dr. Amos Sawyer, of Hillsboro, Ill., one entitled "Thoughts on Evolution." The reading of each of these papers was followed by a discussion, in which many of the members participated with more or less interest and profit, yet without adding much that was really new to the stock of professional knowledge previously existing. The Society then adjourned until 2 P. M. On reassembling in the afternoon, Dr. Joseph Eastman, of Indianapolis, read a paper entitled, "An Enemy Came and Sowed Tares." Dr. H. B. Buck, of Springfield, presented the subject of "Electricity in Gynæcological Practice." Dr. T. S. Galbraith, of Seymour, Ind., read a paper on "Perimetritis;" and Dr. Geo. B. Walker, of Evansville, one on the "Means of Relief in Difficult Labors."

These several papers were well written and each contained some facts of value, although their reading left but little time for general discussion. An evening session was held, to which the public generally was invited, and an address was delivered by Dr. H. A. Johnson, of Chicago, on "Preventive Medicine." The advancements in sanitary science; their importance in preventing disease, and especially in limiting the spread of epidemics, were discussed in a popular and yet interesting and eloquent manner. Like nearly all the sanitarians of the present day, he urged thorough *cleanliness* as the great desideratum to be attained by sanitation, both public and private. At the close of the address, a motion was adopted requesting the speaker to furnish a copy for publication in both medical and secular papers. The Society then adjourned to 9 o'clock the following morning.

Third Day.—The Society was called to order at 9 A. M., the President in the chair. Papers were read as follows: By Dr. H. C. Fairbrother, of East St. Louis, on "Repair of Bones;" by Dr. J. A. Sutcliffe, of Indianapolis, on a "Case of Malignant Disease of the Testicles;" by Dr. Wright, of Onley, on "Exsection of the Radius;" by Dr. A. G. Bernays, of St. Louis, on "Chips from a Surgeon's Workshop;" and by Dr. G. N. Kreider, of Springfield, on "Dislocations of the Shoulder." From the little disposition manifested to occupy time in the discussion of the topics presented in these several papers, as well as from the unexpectedly small number of members present, it became manifest that this would be the last day of the session. After the reading of papers

was closed, the following officers were nominated and elected for the ensuing year:

President—Dr. F. W. Beard, of Indiana.

First Vice-President—Dr. A. B. Miller, of Missouri.

Second Vice-President—Dr. J. A. Sutcliffe, of Indiana.

Third Vice-President—Dr. E. H. Luckett, of Kentucky.

Secretary—Dr. G. W. Burton, of Indiana.

Assistant Secretary—Dr. H. J. B. Wright, of Illinois.

Treasurer—Dr. A. M. Owen, of Indiana.

Chairmen of committees as follows:

On Programme, Dr. A. M. Owen, of Indiana.

On Surgery, Dr. W. A. Byrd, of Illinois.

On Practice of Medicine, Dr. Arch Dixon, of Kentucky.

On Gynæcology, Dr. George J. Engleman, Jr.

On Obstetrics, Dr. G. B. Walker, of Indiana.

On Therapeutics and Hygiene, Dr. J. F. Hibbard, of Indiana.

On Ophthalmology and Laryngology, Dr. J. L. Thompson, of Indiana.

On Chemistry and Toxicology, Dr. J. G. Hynman, of Indiana.

On Legal Medicine, Dr. Jacob Gregory, of Missouri.

It was decided to hold the next meeting at Evansville, Ind., on the second Tuesday of June, to continue three days.

The business part of the annual meeting was then closed by adjournment. But many of the members assembled again in the State House in the evening to participate in a microscopical entertainment, in company with many amateur microscopists of both sexes. The occasion was one of much pleasure and profit to those in attendance, both in a scientific and social aspect. F.

SECRETARIES OF STATE MEDICAL SOCIETIES.

The following list of Secretaries of State Medical Societies and their P. O. address will be found very convenient and useful in facilitating correspondence with such societies:

STATE.	NAME.	POST OFFICE.
Alabama	Dr. T. A. Means	Montgomery.
Arkansas	Dr. L. P. Gibson	Little Rock.
California	Dr. W. A. Briggs	Sacramento.
Colorado	Dr. G. W. Cox	Denver.
Connecticut	Dr. S. B. St. John	Hartford.
Delaware	Dr. G. W. Marshall	Milford.
District of Columbia	Dr. C. H. A. Kleinschmidt	Washington.
Florida	Dr. A. L. Randolph	Tallahassee.
Georgia	Dr. J. A. Gray	Atlanta.
Illinois	Dr. S. J. Jones	Chicago.
Indiana	Dr. E. S. Elder	Indianapolis.
Iowa	Dr. J. F. Kennedy	Des Moines.
Kansas	Dr. F. D. Morse	Lawrence.
Kentucky	Dr. L. P. McMurtry	Louisville.
Louisiana	Dr. P. B. McCutcheon	New Orleans.
Maine	Dr. C. D. Smith	Portland.
Maryland	Dr. G. L. Taneyhill	Baltimore.
Massachusetts	Dr. F. W. Goss	Boston.
Michigan	Dr. G E. Ranney	Lansing.
Minnesota	Dr. C. H. Boardman	St. Paul.
Mississippi	Dr. W. E. Todd	Clinton.
Missouri	Dr. C. A. Todd	St. Louis.
Nebraska	Dr. A. S. v. Mansfelde	Ashland.
New Hampshire	Dr. M. W. Russell	Concord.
New Jersey	Dr. W. Pierson	Orange.
New York	Dr. E. D. Ferguson	Troy.
North Carolina	Dr. L. J. Picot	Littleton.
Ohio	Dr. G. D. Collamer	Toledo.
Oregon	Dr. E. P. Fraser	Portland.
Pennsylvania	Dr. W. B. Atkinson	Philadelphia.
Rhode Island	Dr. G. D. Hersey	Providence.
South Carolina	Dr. J. Forest	Charleston.
Tennessee	Dr. C. C. Fite	Nashville.
Texas	Dr. W. J. Burt	Austin.
Vermont	Dr. J. S. Richmond	Woodstock.
Virginia	Dr. L. B. Edwards	Richmond.
West Virginia	Dr. L. Jepson	Wheeling.
Wisconsin	Dr. J. T. Reeve	Appleton.

STATE MEDICINE.

AMERICAN PUBLIC HEALTH ASSOCIATION.

TWELFTH ANNUAL MEETING, ST. LOUIS, MO., 1884.

The American Public Health Association will convene at St. Louis, Mo., Tuesday, Oct. 14, at 10 o'clock A. M., and continue four days. The meetings will be held in Liederkranz Hall, corner of Thirteenth street and Chouteau avenue.

Papers have been promised for this meeting as follows: on

1. Hygiene of the Habitations of the Poor.—Major Samuel A. Robinson, Inspector of Plumbing of the District of Columbia; Chas. W. Chancellor, M.D., Secretary State Board of Health, Maryland; Wm. K. Newton, M.D., Health Officer, Paterson, N. J.

2. Hygiene of Occupations.—George H. Rohé, M.D., Professor of Hygiene, College of Physicians and Surgeons, Baltimore, Md.; Walter Wyman, M.D., Surgeon U. S. Marine Hospital Service; J. W. Chambers, M.D., Baltimore, Md.

3. School Hygiene.—Samuel W. Abbott, M.D., Health Officer State Board of Health, Lunacy, and Charity, Mass.; Edward M. Hartwell, M.D., Johns Hopkins University; Stephen O. Richey, M.D., Washington, D. C.; Felix Formento, M.D., New Orleans, La.

4. Adulteration of Food.—Hon. Erastus Brooks, Member State Board of Health, New York; Prof. H. B. Cornwall, Princeton College, New Jersey; Chas. E. Munroe, S.B., Professor of Chemistry, United States Naval Academy, Annapolis, Md.; Prof. V. C. Vaughan, M.D., Member State Board of Health, Ann Arbor, Mich.; J. Cheston Morris, M.D., Philadelphia, Pa.

5. Water Pollution.—Major Chas. Smart, M.D., Surgeon United States Army, Member of the National Board of Health; Henry M. Baker, M.D., Secretary State Board of Health, Michigan; Thad. M. Stevens, M.D., Indianapolis, Ind.

6. Disposal of Sewage by Irrigation or Chemical Action.—Henry P. Walcott, M.D., Chairman State Board of Health, Lunacy, and Charity, Massachusetts; Geo. N. Bell, C. E., Newport, R. I.; W. John Harris, M.D., St. Louis, Mo.

7. The Observable Effect Upon the Public Health of Official Sanitary Supervision.—Colonel George E. Waring, C. E., Secretary National Board of Health, Newport, R. I.

8. The Work of Municipal and State Boards of Health.—Reported by their Secretaries.

9. On Disease Germs.—Major Geo. M. Sternberg, M.D., Surgeon United States Army; L. Bremer, M.D.,

St. Louis, Mo.; W. W. Vinnedge, M.D., Member State Board of Health, Lafayette, Ind.; W. H. Stillwell, M.D., Humboldt, Tenn.

10. Cremation as a Sanitary Measure in Times of Great Epidemics.—John Morris, M.D., Baltimore, Md.; Rev. John D. Beugless, Chaplain United States Navy, Brooklyn, N. Y.

11. A Survey of the Present Sanitary Situation in St. Louis.—Being a series of short papers on leading public health topics, contributed by city officials and local sanitarians.

a. The Situation, Soil, and Surroundings of St. Louis, considered from a Hygienic Standpoint. By Col. Henry Flad, C. E., President Board of Public Improvements.

b. Organization of Health Department, Sanitary Legislation, and the Abatement of Nuisances. By John D. Stevenson, Esq., Health Commissioner.

c. Sources, Quality, etc., of the Milk and Meat Supplies of St. Louis. By Joseph Spiegelhalter, M.D., Member Board of Health, and J. C. Cabanné, Esq.

d. Street Paving and the Public Water Supply.—By Thomas J. Whitman, Water Commissioner, and J. W. Turner, Street Commissioner.

e. On the Average Temperatures and Prevailing Climatic Conditions of St. Louis. By Prof. F. E. Nipher, Washington University.

f. Public Sewerage and House Drainage. By Robert Moore, C. E.

g. The leading local (productive) Industries, and their Effect on the Health and Lives of their Operatives. By George Homan, M.D.

h. The Infant and School Populations and existing Causes unfavorable to their Health. By J. P. Kingsley, M.D., Professor of Physiology and Diseases of Children, Mo. Med. College.

i. The Chief Local Factors in the Causation of Disease and Death. By Robert Luedeking, M.D., Professor Pathological Anatomy, St. Louis Med. College.

Several papers have been promised in addition to the above, among which are: on Heating and Ventilation, Chas. O. Curtman, M.D., Professor of Chemistry, Mo. Med. College, St. Louis, Mo.; on Protective Spectacles, Adolphus Alt, M.D., Editor *American Journal of Ophthalmology*, St. Louis, Mo.; on Prevention of Syphilis, J. D. Gatch, M.D., Lawrenceburg, Ind.; on Hygiene of the Nervous System and Mind, C. H. Hughes, M.D., Editor of the *Alienist and Neurologist*, St. Louis, Mo.; on the Sanitary Management of Railway Cars and Stations, W. Thornton Parker, M.D., Acting Assistant Surgeon U. S. Army.

Full reports are expected from all Committees.

The headquarters of the Executive Committee will be at the Southern Hotel. The first meeting of the Committee will be held Monday, Oct. 13, at 2:30 P. M.

The Conference of State Boards of Health will meet at Liederkranz Hall, Monday, October 13, at 2:30 P. M.

The subjects for each day's consideration will be stated the previous day, and an official programme will appear each morning. Ample time for discussion will be allowed under the rules of the Association, and all discussions will be stenographically reported. The morning sessions will be adjourned at 2:30 P. M. daily, to permit the meeting of the Executive Committee, Advisory Council, and Conference of State Boards in the afternoon, and to enable members to visit the Missouri State Fair, which will be open until October 18.

Applications for certificates to enable members and those intending to become members and their families to obtain the reduced rates offered by the various railroad lines to St. Louis, should be made without delay to the Committee of Arrangements: Dr. Joseph Spiegelhalter, Chairman, 1100 Chouteau avenue; Dr. George Homan, Secretary, 703 Washington avenue.

All papers offered the Association become its exclusive property, will be copyrighted, and can only be published by consent of the Executive Committee. All reports and papers must be in the hands of the Secretary by October 12, in order to receive the approval of the Committee. After October 5 all communications to the Secretary should be sent to Southern Hotel, St. Louis, Mo.

Clergymen, engineers, architects, builders and others interested in the practical work of the Association, are cordially invited to be present.

Ladies are especially invited to attend the evening meetings of the Association.

Per order Executive Committee.

IRVING A. WATSON, Secretary.

Concord, N. H., Sept. 27, 1884.

DOMESTIC CORRESPONDENCE.

"THE COMMUNITY OF ORIGIN OF DIPHTHERIA, TYPHOID FEVER AND SCARLATINA."

EDITOR OF THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION:

In your JOURNAL of August 30, was published a paper upon the above subject, which had been read by Dr. E. O. Bardwell at a recent meeting of the Iowa and Illinois Central District Medical Association.

Dr. B. gave, as confirmative evidence of such a theory, examples of the prevalence of one or more of these diseases at different seasons in five different places more or less widely separated, and all in bad sanitary condition. They, if taken singly, might be held to support his theory, but studied collectively and *chronologically*, tend rather to uphold the opinions of the specificity and the propagation of the poisons of these diseases from one to another place.

Typhoid fever had prevailed in all of the places in previous years but failed to appear in any of them in 1882, and diphtheria was endemic that season. The first notice made of diphtheria was in the fall of 1880, when two cases were treated and one died at No. 2. Sometime in 1882 (the time of year was not specified) two cases occurred at No. 1. About March of the same year (and it is important to know whether this

case preceded those above) one case appeared at No. 3. No. 3 is the nearest of the four places to No. 2, where the disease originally showed itself. In September following, No. 5 furnished 15 cases, with four deaths, and in December and January, 30 cases developed, and six ended fatally at No. 4.

It is thus seen that No. 2, which alone was visited by diphtheria in 1880, was the only place that escaped having the disease in 1882. Also that 45 out of 48 cases in all, occurred in two places, (Nos. 4 and 5). The appearance of the disease in No. 5 was followed by its development in No. 4 *two or three months later.* The probability of the seeds of the disease having been conveyed from one of these localities to the other is also favored by their proximity. No. 5 is "a valley nine miles long, and reaches out nearly at right angles to the one just mentioned," *i. e.* No. 4.

So much for diphtheria. Scarlet fever occurred in Nos. 2, 3 and 4. At No. 2, a child contracted scarlet fever in the summer of 1880, "without having been away from home or having had visitors for three months." However this may be, it is a suspicious circumstance that scarlet fever occurred that year in but one other of the places (No. 3), and that is the nearest one—being only four miles from No. 2. The suspicion that some communication existed between Nos. 2 and 3 is strengthened by the fact that a case of typhoid fever developed at the former in the spring of 1881, and the summer of the same year the disease made its first appearance at the the latter place. The scarlet fever at No. 4 was in a mild form, and followed a few months later the attacks of diphtheria in 1882.

Now, as Dr. Bardwell has failed, or it may be has not attempted to trace the propagation of these diseases from one to the other, within the limited space of the five different places, it is fully as reasonable to suppose that he has overlooked the sources from whence the first cases derived their germs from antecedent attacks of the diseases.

If the the three diseases were developed from a common origin, the one or other being evolved from the same nidus according to the peculiar nature of the predisposing force, it is strange that this force should have brought forth nothing but typhoid fever season after season for some years before the appearance of either of the other two diseases. And this is the more strange since the conditions giving rise to the different diseases cannot be widely different from each other. This is proven by the coexistence of two or all of them in the same season.

Neither of the diseases was very exacting regarding the conditions necessary for its development, as winter or summer alike favored the presence of all.

H. D. FRY, M.D.

Washington, D. C.

FRACTURE OF THE CERVICAL VERTEBRÆ.

CAMBRIDGE, MASS., Sept. 25, 1884.

N. S. DAVIS, M.D., EDITOR:

Dear Doctor.—In your last issue of the JOURNAL, Sept. 20, 1884, on page 327, there is a report of a case (by Prof. Küster, *Centralblatt für Chirurgie:* Edinburgh *Clinical Journal*) of complete recovery after fracture of a cervical vertebra, contrary though, as the author remarks, to all previous experience. This report calls to mind a case of fracture of the axis which occurred in my practice several years ago. The following is taken from my notes: J. C. C., a man aged 61 years, fell from a pear tree eighteen feet, striking his head upon the ground and sustaining a fracture of the axis through or near the articulating process on the right side. The fracture was oblique and downwards, evidently involving the body of the axis which supports the odontoid process. The patient was seen at the time by several physicians, none of whom doubted that the patient had sustained a severe fracture of a cervical vertebra. Dr. Morrill Wyman of this city, saw the patient with me several times in consultation. The accident occurred on the 23d day of September, 1872, and the patient was unable to leave his house until the following June, 1873. For nearly four months the patient was obliged to lie in bed on the left side and for several weeks was unable to turn or raise the head; and it was with the greatest difficulty the nurse or attendants succeeded in changing or arranging his pillows owing to the severe suffering attendant on raising his head even for a moment. No attempt at reduction of the osseous parts was deemed advisable, the patient, though suffering from symptoms of a reflex excitability, did not appear to suffer from any marked motor paresis. Morphia was freely used to control the pain, and hydrate of chloral for the nervous disturbance. Several weeks after the occurrence of the accident, the patient had an acute attack of phlebitis of the left leg and foot. This gradually yielded under appropriate treatment; the patient after his recovery from the fall, as was to be expected, had his head inclined to the left and though the parts were quite stiffly fixed, he experienced but little inconvenience. There was marked evidence of the fracture the patient sustained by the fall, in the shape of a callus or hard prominence of the osseous tissues. This was observed more particularly posteriorly and on the right of the axis. The patient at length recovered from all his nervous symptoms, and was in fair health until 1879, when after a series of reverses in his fortune he began to be troubled with cough and difficult micturition. He had enlargement of the prostate, and there was a residual sediment of the urine. In May, 1881, the patient began to suffer from a severe gastritis, which after a few months presented symptoms of malignant disease of the stomach. The patient became extremely emaciated, and died Dec. 9, 1881.

Autopsy revealed a large cancerous mass of the stomach in front of the pylorus; the stomach was very much contracted in size; the malignant mass was raised above the inner surface of the stomach. It was a sort of fungoid, darkish, and was the probable source of the hæmorrhage from which the patient suffered. Both lungs were extensively adherent; the heart was normal. There was only one kidney; this was on the right side. Positively there was none on the left, but there was a ureter on the left, but it was inpervious. The peritonæum on the inside was thick-

ly dotted with little white points. The kidney was somewhat larger than normal, but showed no positive indication of disease. The liver and spleen were highly congested. The bladder was somewhat contracted but otherwise healthy. The prostate gland was larger than normal, but it was not excessively so. The spinal column was curved laterally. The body of the patient being so greatly emaciated evidence became conclusive of fracture. There was a marked osseous callus or protuberance (prominence) of the right lamina of the axis extruding through the articulating process, and into the body of the vertebra. The axis was not removed, but none of the physicians who attended the autopsy, including Medical Examiner Dr. A. T. Holt, who conducted the examination, had the slightest doubt that the patient had sustained a fracture of a cervical vertebra as above described.

Very respectfully, your obedient servant,

AUGUSTUS P. CLARKE, M.D.

BOOK REVIEWS.

SECOND ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF INDIANA, For the Fiscal Year Ending Oct. 31, 1883. Cloth. 335 pages.

The report shows that the Board have given their attention to the sanitary condition of the school houses throughout the State, a matter of fundamental importance, and one in which school authorities are often criminally negligent. This is true not only of the neglected country school houses but also of the crowded city buildings, and it is a matter worthy of remark that it is generally in the simplest matters of hygiene that the fault exists. Surely this is due more to carelessness than to ignorance on the part of the school authorities.

Several contributors to this report call attention to the importance to public health of some effectual measure for the prevention of syphilitic contagion.

The apparent spread of this disease, its direct relation to the present and future strength of the nation, morally as well as physically, make these suggestions worthy of careful attention. The gross ignorance of the public respecting this subject; the consummate skill with which the unprincipled in medical practice turn this ignorance to personal gain; the sense of modesty as well as the personal unfitness which prevents alike the religious and secular teacher from raising his voice against this hidden evil, an evil still more dangerous because it is concealed, all make it incumbent upon some one, and who better than an impartial public board, whose function is that of guarding the public health, to take the matter in serious consideration with a view to inaugurating efficient measures for its suppression.

The latter half of the volume is occupied by the report concerning vital statistics of the State for 1883. It consists of copies of blanks sent out, of reports received, and of tabulated statements respecting deaths, births, and other matters pertaining to this department of the work of the board.

MISCELLANEOUS.

CLITROPHOBIA.

Not clitoriophobia (or clitorisphobia) which is a disease confined to gynæcologists, but clitrophobia, a term used by an Italian writer (*Revista Clin. de Bologna*) to designate three cases suffering from a cerebral affection resembling agarophobia, and which consists in a marked horror of being confined in a close place. They suffer, when so confined, in an extremely painful manner, the head becomes hot, the temporal arteries beat forcibly, they become furious and make desperate efforts to open the door, try to get out of the window or to kill themselves when they find they cannot escape.

It seems to constitute a pure monomania, that is to say it may exist without any manifestation of delirium. At other times it is accompanied by other psychological affections.

THE ITALIAN QUARANTINE AS AFFECTING MEDICAL JOURNALS.

The *Journal d' Accouchments* tells us that everything going into Italy from France, individuals, merchandise and correspondence undergoes a rigorous disinfection. Dr. Koch on his return to Germany, was thoroughly disinfected at the Italian frontier, he should have passed by declaring that the germs might be in his intestines and therefore not reached by the disinfectants. It seems that two wagons, one loaded with chloride of lime and the other with phenic acid, were disinfected at Chiasso? The rule was that everything should be disinfected that passed the frontier, and it was done.

The *Progrès Médical* states that many of its Italian exchanges have desired a suspension of that journal during the prevalence of the epidemic, "the journals arrive all torn and reduced almost to their titles from the disinfection which they undergo." Many travellers have been nearly asphyxiated in the rooms used for disinfection, when they have been obliged to remain for any length of time, and have consequently been seriously affected.

THE MEDICAL DEPARTMENT OF THE CHICAGO PUBLIC LIBRARY.

The Chicago Medical Society wishes to inform the profession that there are now 1,200 bound volumes of medical books in the Public Library, in a convenient location to be consulted by the profession.

The majority of these works have recently been purchased by the Society Committee on Library. They embrace a carefully chosen collection of the best known recent medical authorities in English and foreign languages.

Most of the standard works on the leading specialties (including dental surgery) have been obtained, and also some books on pharmacy. The funds for this purchase consisted of an appropriation of $500 from the Society treasury, supplemented by voluntary contributions from the physicians and druggists of this city.

Valuable contributions of older works were also received from some sources.

This collection is located in the southeast corner of the south room of the upper floor, and a large table and chairs have been provided for the convenience of physicians. The librarian of the upper floor will show the way to those desiring to consult the books.

By agreement with Mr. Poole, the books will not be loaned out, but kept in the Reference List for consultation, so as always to be found when needed.

There will also be found a good representation of American and foreign periodicals, which can be inquired for at the librarian's counter.

A large and valuable collection of old journals is not yet on the shelves, for lack of money to bind them. Most of these were donated by Dr. Vincent L. Hurlbut.

EDMUND ANDREWS, M.D.,
F. C. HOTZ, M.D.,
DAVID GRAHAM, M.D.,
Committee on Library.

TOBACCO AS AN ANTIZYMASIC.

M. Pecholier in the *Montpellier Medical* considers that the use of tobacco preserves one from an infinity of contagious diseases. He thinks that as typhoid fever is due to a ferment, the pullulation and life of which in the organism is the initial cause of the disease, tobacco is the most powerful destructive agent, and that its action is due to nicotine; he declares that a number of smokers have been protected from epidemic influences through tobacco. Perhaps it is for this reason that Willis recommends the use of tobacco in armies, as a preservative against certain epidemic diseases.

DECORATIONS OF MEDICAL MEN.

It would seem as if our foreign brethren *must* have decorations of some kind, to judge from the letter of a correspondent of the *Medical Press and Circular*, who tells us that one of the guests at the reception of the King of Denmark, at Christiansberg, during the meeting of the International Medical Congress, wore upon his breast the proud shield of "a bicycle club." The American delegate comes in for his share however, in the retort said to have been made by the King in reply to the assertion that "in America we are all Kings." "I am glad to meet a brother, all in the same business." Old, but still good and applicable.

A STATUE TO DR. GUISLAIN.

An effort is being made to secure subscriptions for the erection of a statue to *Dr. Joseph Guislain*. The members of the Society of Mental Medicine of Belgium are actively interested in promoting this object, and desire that all specialists in this department of medicine have an opportunity to subscribe, and that the statue represent the combined subscriptions of the specialists in mental diseases of the world, rather than any given district. To this end, subscriptions have been received from England, France, Russia, Germany, Italy, Holland and Sweden, in sums varying from 5 to 25 francs. The United States is, as yet, not represented. We trust this notice may come to the eyes of medical men especially interested in this department of medicine, of which Dr. Guislain was so distinguished a member. We hope the subscriptions from America towards the erection of this statue will compare favorably with those of other countries. Subscriptions may be sent to Dr. B. C. Ingels, Medecin de l'Hospice-Guislain à Gand, Belgium.

All subscriptions are published in list form, and will be sent to subscribers.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT UNITED STATES ARMY, FROM SEPTEMBER 20, 1884, TO SEPTEMBER 26, 1884.

Middleton, Passmore, Major and Surgeon, having reported from sick leave of absence, assigned to duty at Fort Leavenworth, Kan. (Par. 2, S. O. 188, Hdqr's Dept. of Mo., Sept. 19, 1884.)

White, Robert H., Captain and Assistant-Surgeon, ordered for duty as Post Surgeon, Fort Gaston, Cal. (Par. 2, S. O. 110, Hdqr's Dept. of Cal., Sept. 13, 1884.)

Wilson, Wm. J., Captain and Assistant-Surgeon, from Dept. of Dak. to Dept. of the East.

Gardiner, J. de B. W., Captain and Assistant-Surgeon, from Dept. of Ariz. to Dept. of the East.

Corbusier, Wm. H., Captain and Assistant-Surgeon, from Dept. of East, to Dept. of Ariz.

La Garde, L. A., Captain and Assistant-Surgeon, from Dept. of Mo. to Dept. of Dak. (Par. 1, S. O. 220, A. G. O., Sept. 19, 1884.)

Hall, Jno. D., Captain and Assistant-Surgeon, assigned to duty at Fort Townsend, W. T., to relieve Surgeon R. S. Vickery. Surgeon Vickery on being relieved, directed to report to commanding officer Vancouver Bks., W. T., for duty. (Par. 3, S. O. 140, Hdqr's Dept. of Col., Sept. 15, 1884.)

Birmingham, H. P., First Lieutenant and Assistant-Surgeon, leave of absence extended 20 days. (Par. 2, S. O. 116, Hdqr's Div. of the Mo., Sept. 22, 1884.

Barrows, C. C., First Lieutenant and Assistant-Surgeon, granted one month's leave of absence with permission to apply to the proper authority for an extension of one month. (Par. 4, S. O. 86, Hdqr's Dept. of Ariz., Sept. 13, 1884.)

Diety, W. D., First Lieutenant and Assistant-Surgeon, assigned to duty at Fort Selden, N. M. (Post Surgeon.) (Par. 4, S. O. 187, Hdqr's Dept. of Mo., Sept. 18, 1884.)

McCaw, W. D., First Lieutenant and Assistant-Surgeon, assigned to duty as Post Surgeon, Fort Craig, N. M. (Par. 5, S. O. 187, Hdqr's Dept. of Mo., Sept. 18, 1884.)

OFFICIAL LIST OF CHANGES IN MEDICAL CORPS OF THE NAVY DURING THE WEEK ENDING SEPTEMBER 27, 1884.

Bloodgood, D., Medical Inspector, to Washington for examination preliminary to promotion, and as to qualifications for sea duty, Oct. 1, 1884.

Hord, W. T., Medical Director, as member of Naval Examining Board, Oct. 1, 1884.

Turner, T. J., Medical Director, as member of Naval Examining Board, Oct. 1, 1884.

Boyd, J. C., Passed Assistant-Surgeon, placed on waiting orders, Sept. 25, 1884.

Oberly, A. S., Surgeon, to Washington for examination preliminary to promotion, and as to qualifications for sea duty, Oct. 1, 1884.